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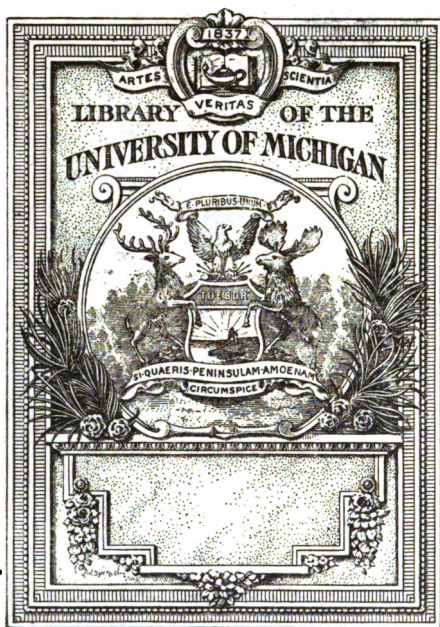
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SCHOOL OF PHARMACY

OF THE

UNIVERSITY OF MICHIGAN

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REGISTER OF ALUMNI

AND

ANNUAL ANNOUNCEMENT.

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TWENTY-SIXTH YEAR. 1893-1894.

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ANN ARBOR, MICHIGAN:

PUBLISHED BY THE UNIVERSITY.

1893.



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**THE COURIER OFFICE, PRINTERS AND BINDERS,**  
**ANN ARBOR, MICH.**  
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# FACULTY.\*

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JAMES B. ANGELL, LL.D.,  
PRESIDENT.

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ALBERT B. PRESCOTT, PH.D., M.D.,  
Director of the Chemical Laboratory, *Professor of Organic Chemistry.*  
DEAN OF THE FACULTY.

WILLIAM H. PETTEE, A.M.,  
Professor of Mineralogy and Economic Geology, *in charge of Crystallography.*

VOLNEY M. SPALDING, A.B.,  
*Professor of Botany.*

OTIS C. JOHNSON, A.M., PH.C.,  
*Professor of Applied Chemistry, in charge of Qualitative Analysis.*

PAUL C. FREER, PH.D., M.D.,  
*Professor of General Chemistry.*

ALVISO B. STEVENS, PH.C.,  
*Assistant Professor of Pharmacy.*

SECRETARY OF THE FACULTY.

EDWARD D. CAMPBELL, B.S.,  
Professor of Metallurgical Chemistry, *in charge of Quantitative Analysis.*

DAVID M. LICHTY, M.S.,  
Instructor in General Chemistry, *in charge of Physics.*

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\* For the collegiate year 1893-94. Members of the Faculty of this Department are officers of the University, usually with duties as members of the Faculties of other Departments, and the official titles here given are those of University appointment for all duties. Services proper to the School of Pharmacy are designated in italics.

JULIUS O. SCHLOTTERBECK, B.S., PH.C.,

*Instructor in Pharmacognosy and in Botany, in Charge of Materia Medica.*

WILLIAM F. EDWARDS, B.S.,

*Accountant and Instructor.*

MOSES GOMBERG, B.S.,

*Instructor in Organic Chemistry.*

WILLIAM H. ANDREWS,

*Assistant in Quantitative Analysis.*

PERRY F. TROWBRIDGE, PH.B.,

*Assistant in Qualitative Analysis.*

L. D. HAVENHILL, PH.C.

*Assistant in Pharmacy.*

# ANNOUNCEMENT FOR 1893-94.

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**THE EDUCATIONAL SCOPE OF THE SCHOOL.**—This Department of the University gives training for all branches of pharmacy and for various chemical pursuits of the present time. It makes a well-grounded preparation for service as a manufacturing chemist or as an analyst. The graduate is assured a thorough qualification for the prescription table, and for the most responsible positions in pharmacy. He is fitted to act as the chemist of the medical profession. In respect to the discipline of both the intellectual and the executive powers, the work of the School offers decided advantages in the methods of the laboratory and the classroom.

**THE CALL FOR CHEMISTS.**—In reply to all inquiries as to what demand there is for the services of the graduates of this School, and what opportunities are before them in chemistry, in pharmacy, and in business, THE REGISTER OF ALUMNI for the past four years, is presented in this issue. This directory is carefully revised each year. It is made to show as nearly as possible what each graduate is now doing, and to give some mention of what he has been doing since he left college. There is a published Register of all graduates since the degree of Pharmaceutical Chemist was first conferred, in 1869. As a professional directory it is in constant use by those who obtain the services of chemists and pharmacists. There have been six hundred and fifty-seven graduates in twenty-four years. As a rule the alumni engage in chemistry and pharmacy, beginning without delay, and in due time attaining to posts of credit. It can be seen by each year's issue of the Register how generally the

members of the last class, a half year out of college, are already actively engaged in their chosen vocation. And the lists of the classes give proof that the training of this School is adapted to meet the wants of the present time. Moreover that the work of the School really gives its students a lasting love of chemical pursuits,—if it did not a larger number would be diverted to the many avenues of business opening everywhere. It is true of this School that the percentage of its graduates who succeed in the practice of their profession is greater than the percentage of its students who succeed in becoming graduates.

**THE UTILITY OF CHEMICAL TRAINING.**—Such is the fertility of artificial production everywhere that commerce cannot go on without the analytical chemist. And nowhere is the ability of the well-trained analyst needed more than it is in pharmacy. Therefore it is that the graduates of this School, qualified as chemists, practiced in qualitative, quantitative, organic, and microscopical work, find so prompt a demand for their services.

**THE EXTENT OF THE REQUIRED WORK.**—As detailed in the following pages, the work of the School is conducted in lectures, recitations, and laboratory practice, organized in a progressive course of at least two collegiate years of nine months each, October to June inclusive, required for graduation. During the college year the student has no time at his disposal for service in a drug store. The required work is by no means such as any student can accomplish in short terms of five months, or while serving in a pharmacy. Those likely to fail in completing the course in two years are permitted, if they are diligent, to arrange the work for three years.

**THE COURSE OF THREE YEARS,** arranged from the beginning, is more especially advisory for those preparing for special positions in chemical manufacture, or for service as an analytical chemist. Those who graduate at the expiration of two years are offered a year of post-graduate work.



**THE LABORATORIES AND THE WORK REQUIRED IN THEM.**—Of the laboratories of the University, those of chemistry, microscopic botany, pharmacy, and pharmacognosy are used by all the students of this School. All are held to work in the laboratories, from four to six hours daily throughout the course.

**THE LIBRARY.**—The library of the School is shelved with the General Library of the University. It is open to readers from 9 A. M., to 9:30 P. M., daily. The latest works of reference in pharmacy, chemistry, and related sciences, as well as the current periodicals of the profession, are accessible to the student. For the demands of original research all the important repositories of science, in their complete sets, are open to the reader.

**UNIVERSITY PRIVILEGES.**—Admission to classes and laboratories in other Departments of the University is granted to students of the Department of Pharmacy, without additional expense, provided the applicants for such permission be found qualified to take the desired studies, and provided students shall not undertake more work than they can properly perform. About one-half of the obligatory studies of the School of Pharmacy can be obtained in advance in the Department of Literature, Science, and the Arts; or, if obtained in the former, may receive credit upon admission into the latter. Graduates in pharmacy at this School are qualified in the larger portion of the work of the first year in the Department of Medicine and Surgery.

**FACILITIES FOR PRACTICING PHARMACISTS. PARTIAL COURSES, OPPORTUNITIES FOR RESEARCH.**—Pharmacists who desire to pursue certain branches of study for a limited time in this School may avail themselves of any and all of its facilities, with the helpful coöperation of the Faculty, and subject only to indispensable regulations. Those of responsible age and service can be granted full hours in the laboratories, the use of apparatus, admission to such lectures as may be desired, references to authorities in the library, and

appliances for investigation. *Graduates in pharmacy at other schools* may select studies and adapt their work to their individual purposes. *Short terms of study* can be provided for in various ways, under the organization of numerous courses in the University. Students able to take only *One College Year* at the School obtain in this time very substantial advantages for the practice of pharmacy, as follows: (1) lectures on general chemistry, (2) lectures and recitations on pharmacy, (3) a thorough laboratory course in qualitative analysis and study of the action of chemicals on each other, (4) a full laboratory course in pharmacopœial preparations, and (5) a course in botany and pharmacognosy, with a drill upon the crude drugs of the materia medica. Those taking a partial course in the School are subject to the regulation of their studies by the Faculty, and are required to do satisfactory work while they remain, the same as candidates for graduation.

PREPARATION FOR THE STATE EXAMINATIONS IN PHARMACY.—The University grants opportunities to make preparation for the examinations of the boards of pharmacy. The pharmaceutical and chemical lectures and laboratory courses constantly going on, the museums and libraries open every day, and the personal direction granted to every learner, give exceptional advantages to those who would devote themselves wholly to special studies for a given time. Thus in pharmacognosy the learner has access to the classified collections of crude drugs and pharmaceuticals, taking one after another in hand for direct acquaintance. And every encouragement is given to the learner, to help him *to study for the better practice of pharmacy, not narrowly for an examination*. With well directed study the learner becomes able to take a State examination not only without fear but with satisfaction and benefit. To this end the courses of study named in the paragraph last above are commended. The full course for graduation, much wider than the State examinations, is certainly the best means of preparing for them.

**THE REQUIREMENTS FOR ADMISSION.**—Subject to the regulations above referred to, the University opens its facilities in the Department of Pharmacy to any pharmacist of sufficient age, who has fairly entered into practice, and to persons of other professional experience, (as definitely stipulated on page 12), without the requirement of entrance examination, other than that in the use of our language. But the University does not confer a degree or diploma in pharmacy upon any person who has not passed the prescribed entrance examination, or completed a good high school course, as detailed on page 12, and it is necessary to fulfil this requirement before entering as a candidate for graduation. The entrance examination, in effect, requires the completed course in a high school of good standing, and graduates from any one of the full or four-year courses of such high schools are received upon their diplomas. Those who have their preparation before them are advised that, in general, the “scientific course” of the high school, with Latin and German, will be the most helpful. If the entrance examination is to be taken, the abatement in a part of the Latin and German, for those who have had professional experience, is a limited concession extended to those already in the profession, who have passed by the opportunity for completion of high school studies. Applicants are assured that little can be done by any student during college time in making up deficiencies in the studies required for admission.

**ADMISSION TO THE SCHOOL FOR A SPECIAL COURSE** is to be obtained only under the requirements defined on page 12, without modification. That is, persons of professional experience are admissible for work in the school, without entrance examinations, except one in English, while others are required to take all the examinations, unless they have high school credentials. Graduates in pharmacy at other schools, and graduates in medicine are received without examination.

THE SCHOOL YEAR BEGINS OCTOBER 1, FOR ALL STUDENTS; and closes on Commencement day, Thursday following the last Wednesday in June. Students of the first year are released the second Friday before Commencement. For special purposes admission may be granted at the beginning of the second semester, February 17, 1894. For the full regular work admission cannot be granted at any other time than at the opening of the first or the second semester, as students are instructed in classes in progressive order. For investigations, students can be received at any time when there is room in the laboratories.

AS TO BUSINESS EXPERIENCE.—The school provides training in pharmaceutical science, not practice in commercial business. Manifestly the work of a professional college is not a substitute for the experience of a pursuit in life. And responsible service in pharmacy is dependent upon both business qualifications and professional competence, each of which is necessary. This school assumes no responsibility for mercantile training, or for experience in the business of pharmacy. A term of service in a drug store has a value which is subject to much variation, a value best estimated by the business pharmacist himself, without the intervention of the college. Therefore experience in the business of pharmacy is not made a requirement for the degree of Pharmaceutical Chemist. When advice is asked respecting the best time in which to take the college work, it is to be said that there are advantages in obtaining some practical training in a drug store before entering the college course, and there are other advantages in having the college course before giving a very long term of service in pharmacy. A year of pharmaceutical experience after college is worth several years of the same before college. But until experience be obtained the graduate in pharmacy is not fully ready for responsible service in commercial practice.

## I. CALENDAR OF THE COLLEGIATE YEAR.

## 1893.

September 29-30.		<i>Examination for admission</i> , beginning with all applicants at 9 A. M. of the 29th.
October	I.	FIRST SEMESTER BEGINS.
NOVEMBER	—	Thanksgiving Recess of three days.
December	22.	(Evening.) Holiday Vacation begins.

## 1894.

January	9.	Exercises resumed.
February	16.	(Evening.) FIRST SEMESTER CLOSES.
February	19.	SECOND SEMESTER BEGINS.
April	13.	(Evening.) Recess begins, ending April 23, (evening.)
June	27.	Alumni Day; Classes of 1869 to 1894.
June	28.	COMMENCEMENT IN ALL THE DEPARTMENTS OF THE UNIVERSITY.

## II. REQUIREMENTS FOR ADMISSION.

All applicants for admission must be at least eighteen years of age.

It is advisory to obtain at least a year of practical training in a drug store before entering the college course in pharmacy. The required work in the school leaves the student no time for an engagement in a drug store during the college year.

Applicants who bring diplomas of graduation from standard high schools,\* or certificates of good standing in institutions of the collegiate grade, are admitted without examination.

Applicants who bring evidence of having been engaged in the practice of pharmacy for at least two years may be admitted upon examination in the following branches:

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\*Including those named on pages 43-46 of the University Calendar, and others giving good instruction in all the studies named below.

1. ENGLISH.—Each candidate will be examined as to his ability to write English, correct in orthography, punctuation, the use of capitals, grammatical construction, and rhetorical fitness.

2. MATHEMATICS.—*Arithmetic*.—Fundamental Rules. Fractions (Common and Decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Measures. *Algebra*.—Fundamental Rules, Fractions, Equations of the first degree, containing two or more unknown quantities.

3. LATIN.—Jones's first Latin Book, or Harkness's Latin Reader, or an equivalent amount in any other text-book. Instead of Latin, GERMAN to the extent of a full year's study will be accepted. Those who have a speaking and reading acquaintance with German will be held to an examination in the grammar.

Persons over nineteen years of age who bring evidence of having been engaged in the practice of pharmacy, in some capacity, for at least two years, and persons over twenty-one years of age who have had other professional experience approved by the Faculty, may be admitted (for a part or the whole of the course) upon passing the examination in English; but they shall not be eligible for graduation until they have passed the other examinations described in the preceeding paragraph.

Other applicants will be examined in the following branches:

1. ENGLISH.—The same as given above.

2. MATHEMATICS.—*Arithmetic*.—The same as given above. *Algebra*.—The same as given above. *Geometry*.—The Elements of Plane Geometry, as given in Olney's New Elementary Geometry, or an equivalent in other authors.

3. LATIN OR GERMAN.—The applicant may offer (1) three years of preparation in Latin; or (2) two years in Latin and one year in German; or (3) one year in Latin and two years in German. Those who offer three years in Latin will be examined in the *Grammar*—a thorough preparation in the elements; in *Prose Composition*—Jones's Exercises in Latin Prose Composition, or an equivalent in some other text-book; and in *Reading*—four books of Cæsar's Commentaries, and six select Orations of Cicero, or an equivalent amount in some other text-book. Those who offer two years of Latin will be examined as above, except in the Orations of Cicero. Those who offer one year of Latin will be examined on an amount equivalent to Jones's First Latin Book. Those who offer one year of German should have had daily recitations on the Grammar during that

time, accompanied by weekly exercises in writing, and the reading of seventy-five pages of some German Reader. Those who offer two years of German should have devoted one year to the reading of some complete work in German literature.

4. **PHYSICS.**—Avery's Natural Philosophy, or an equivalent.

5. **BOTANY.**—The elements of vegetable morphology and physiology as presented in Gray's Lessons, or an equivalent, together with written descriptions of not less than fifty species of plants.

Applicants whose preparatory course of study has not conformed precisely to the requirements above enumerated will be allowed to offer, in place of a portion of these requirements, an equivalent amount in similar branches of study; and if they show, by examination, or by other evidence, that the work in these branches has been sufficient in amount, such branches will be accepted as a substitute for those omitted.

### III. COURSES OF INSTRUCTION.

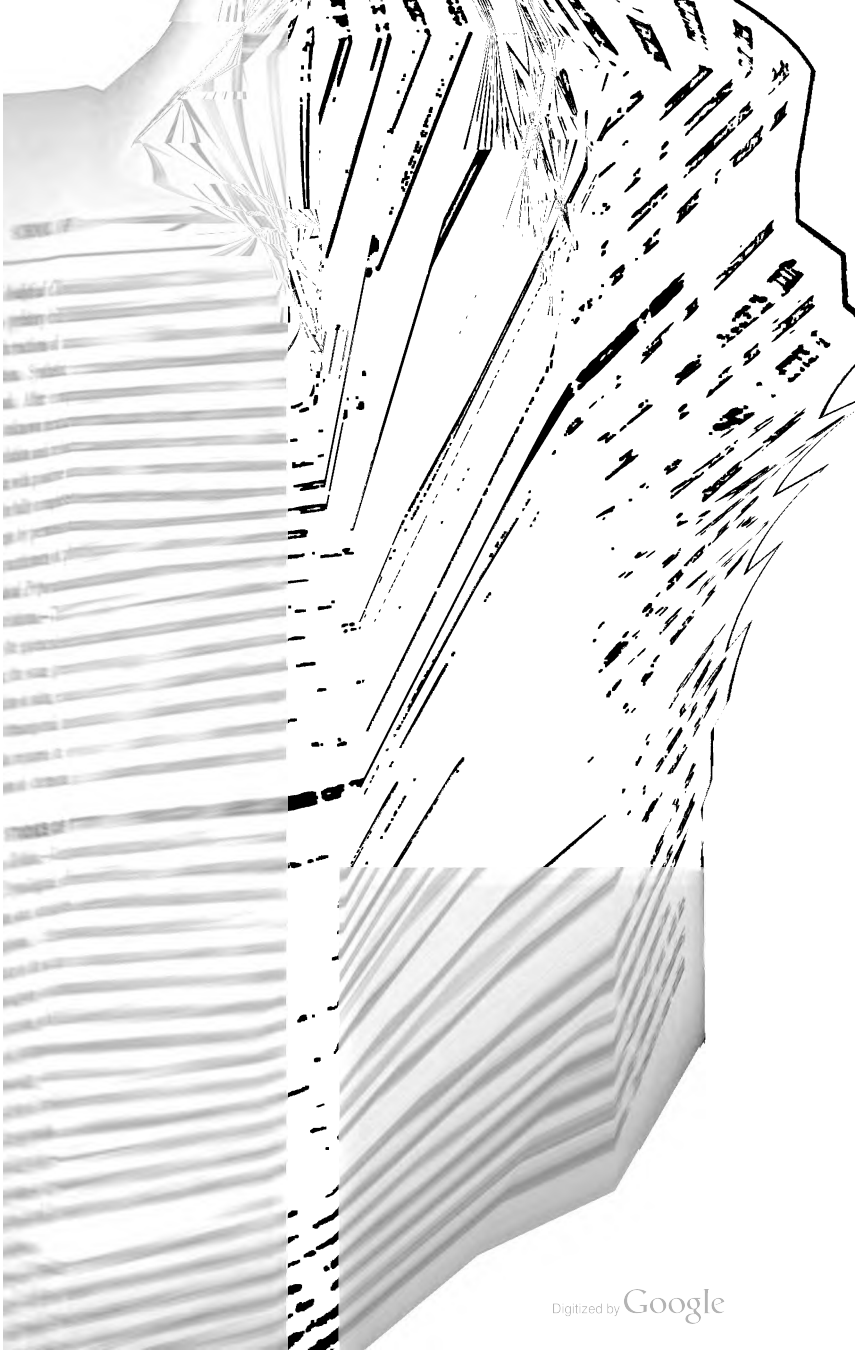
#### STUDIES OF THE FIRST YEAR.

1. *Pharmacy.*—Class studies and lectures.—Problems in parts by weight from chemical equations. Weights and volumes, specific gravity, commercial gravity scales. History of pharmacopœias, and recitations from the U. S. Ph. Problems in chemical proportions, weights, volumes, and percentages of strength. The cardinal operations of pharmacy; pulverization, solution, filtration, pressure, percolation, dialysis. The galenicals, infusions, extracts, graduated extracts, fluid extracts, tinctures, spirits, solutions, waters, syrups, cerates, etc.

2. *General Chemistry.*—Experimental lectures. The underlying principles of chemical action; descriptive chemistry of the elements and inorganic compounds; molecular constitution; the periodic law of elements; studies of synthetic production. Heat, light, and electricity.

3. *Botany and Microscopy.*—Laboratory work and lectures. Structural Botany and the delineation of cell-structure and cell-contents, tissues and tissue-systems. The microscopical examination of foods and condiments and the detection of adulterations. Reports upon commercial samples.

4. *Pharmacognosy.*—Practice in the recognition of crude drugs, chemicals, and preparations, in all their common commercial forms, the articles being studied in the hands of the student, and under the eye of the teacher.





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5. *Qualitative Analytical Chemistry*.—Recitations and laboratory work, each daily.—A prefatory drill upon the notation of metallic salts. Laboratory training in reactions of acids and bases, solubilities of salts, and means of separation. Synthetic operations. Chemical equations to be written on demand. After completion of the foregoing, the course in actual analysis of unknown mixtures, solid and liquid. Mixtures presenting agents of oxidation and reduction; and the study of oxidation in the system of notation with positive and negative units of valence.

Course 5. must be fully completed before entering upon either Course 6, or Course 12, except by permission of the Faculty. This permission may be granted to practitioners of pharmacy.

6. *Pharmaceutical Preparations and Operative Pharmacy*.—Laboratory work with recitations.—The minor operations of pharmacy; prescription practice; the galenicals of the pharmacopœia, including solid and fluid extracts; the scale preparations. Distillation of acids and ethers; crystallization of salts; elaboration of chemicals. Preparation of prescriptions. Pharmacopœial methods, and the criticisms upon them. Satisfactory results required in over one hundred preparations. Problems in comparison of chemical proportions with parts by weight and by volume.

#### STUDIES OF THE SECOND YEAR.

7. *Materia Medica*.—Recitations.—The history and classification of medicines. Physiological effects; medicinal doses: poisonous quantities. Symptoms and antidotes. Training in the Latin and English forms of prescriptions. Criticism of prescriptions in respect to errors of quantity. Practice in the actual chirography of prescription files.

8. *Pharmacognosy* continued.—Practice in the Museum.—Studies by the class in sections, with the teacher. The ready recognition of the various articles of pharmaceutical commerce, their synonyms and uses.

9. *Pharmacology and Therapeutics*.—Lectures, elective.—The physiological action of medicines, and their relative position and value in the uses of the physician.

10. *Crystallography*.—Lectures with practice in determination.—Study of the systems of crystals, by models and specimens, and classification of the forms found in minerals and in chemical products, the class working by sections.

11. *Organic Chemistry*.—Recitations and lectures.—The systematic chemistry of carbon compounds, their molecular structure, synthetic derivation, and chemical description. Method of manufacture and means of analysis. The technology of organic products in general use.

12. *Quantitative Chemical Analysis*.—Laboratory work with lectures.—The determination of specific gravities; volumetric estimations; gravimetric determinations and separations. The results to come within specified limits of recovery.

13. *Organic Analysis*.—Laboratory work and lectures.—Pharmaceutical assays of vegetable drugs; qualitative practice with the alkaloids and with acids; volumetric estimations; the analysis of nostrums. Toxicology and analysis for poisons. Analysis of butter, lard, and other fats. Sanitary analysis of potable water. Examination of alcoholic liquors. Plant analysis. Elementary organic analysis.

14. *Pharmacy*.—Lectures and practice.—The technology of inorganic and organic articles used in pharmacy. Sources, manufacture, commercial history, prevalent impurities, standards of purity and strength, official tests, technical and public uses. Practical training in dispensing pharmacy at the *Prescription Stand*.

15. *Analysis of Urine*.—Elective.—Laboratory work and lectures.—Normal constituents, their quantitative estimation and due variations. Abnormal constituents, their recognition, estimation and pathological indications. Work by chemical and microscopical methods throughout.

### SCHEDULE OF HOURS.\*

#### FIRST YEAR.

##### FIRST SEMESTER.

8¼ to 9¼ Daily.	Course 5. Recitations and lectures.
9½ to 10½ Daily.	Course 2. Lectures.
10½ to 11½ Tuesday and Thursday.	Course 4. Recitations.
10½ to 11½ Wednesday and Friday.	Course 1. Lectures.
1 to 5 Daily.	Course 5. Laboratory.

##### SECOND SEMESTER.

8¼ to 9¼ Monday, Tuesday, Wednesday, Thursday.	Course 3. Laboratory.
9½ to 10½ Monday, Wednesday, Thursday, Friday.	
9½ to 10½ Tuesday.	Course 3. Lectures.
10½ to 11½ Wednesday.	
10½ to 11½ Monday, Friday.	Course 4. Recitations.
10½ to 11½ Tuesday, Thursday.	Course 2. Lectures.
11½ to 12½ Daily.	Course 1. Lectures.
1½ to 5½ Daily.	Course 6. Laboratory.

#### SECOND YEAR.

##### FIRST SEMESTER.

8¼ to 9¼ Tuesday, Thursday.	Course 10. Practice.
9½ to 10½ Monday, Tuesday, Thursday.	Course 14. Lectures.
10½ to 11½ Daily.	Course 11. Lectures.
11½ to 12½ Tuesday, Thursday.	Course 12. Lectures.
11½ to 12½ Monday, Wednesday, Friday.	Course 9. Recitations.
1½ to 5 Daily.	Course 12. Laboratory.
4 to 5 Monday, Wednesday.	Course 10. Lectures.

\* A supplementary schedule of hours will be issued in September, 1893.

## SECOND SEMESTER.

9½ to 10½ Monday, Tuesday.  
 8½ to 10½ Daily.  
 10½ to 11½ Tuesday, Thursday.  
 10½ to 11½ Wednesday, Friday.  
 11½ to 12½ Daily.  
 5 to 6 Daily.  
 1½ to 6 Daily.

Course 9. Lectures.  
 Thesis. Library.  
 Course 8. Recitations.  
 Course 13. Lectures.  
 Course 7. Recitations.  
 Course 14. Museum.  
 Course 13. } Laboratory.  
 Thesis. }

## SELECTED STUDIES.

Students are received for special lines of technical training, with liberty to take such branches as shall be found profitable to them. The several courses described as studies of the third year, below, can be taken by undergraduate students who are prepared for them, when their time permits. Among the shorter laboratory courses offered to students are the following:

*Galenical Preparations and Extemporaneous Pharmacy.*—Additional to Courses 6 and 14.

*Pharmacognosy.*—Ready recognition of medicines and apportionment of quantities by the eye. Briefer than Course 3. Advantageous to the medical student.

*Pharmacopæral Analysis.*—A course in the limit-tests for strength and purity of important medicines.

*The Alkaloids.*—A course, briefer than Course 13, upon the identification of important alkaloids.

*Organic Preparations.*—Practical studies of synthetic chemical methods.

*Manufacturing Pharmacy.*—Additional to Course 6. Experimental study of methods of production.

## ELECTIVE STUDIES OBTAINED IN THE THIRD YEAR.

The following named courses are accessible to graduates, and are offered to all who are prepared to take them. They are advanced studies of the same subjects pursued in the First and Second Years, in Courses 1 to 15.

*Organic Combustions.*—Estimation of carbon, hydrogen, nitrogen, etc., in the organic laboratory. Work for one semester or more.

*Organic Preparations.*—The production of synthetic chemicals (additional to Course 6).

*Purification of Chemicals.*—The production of pure chemicals from the impure articles of commerce.

*Drug Assaying.*—Additional to Courses 13 and 14. Standardization of crude drugs, and valuation of chemicals.

*Plant Analysis.*—By systematic methods, for special or general purposes.

*Analysis of Foods.*—Additional to Course 13. The valuation of butter, lard, milk, coffee, flour, etc., and the determination of adulterants.

*Water Analysis.*—Sanitary and industrial analysis of waters (additional to Course 13), Mineral Water analyses (additional to Course 12).

*Iron and Steel Analysis.*—Training for the laboratories of steel works, rolling mills, and iron mines. The work of at least one college year, following Courses 5 and 12.

*Metallurgy and Assaying.*—The fire assay of gold, silver, copper, etc. Studies of the smelting works of these and other metals.

*Analysis of Paints.*—Practical studies of common paints of various colors. Analysis of drying oils. Must be preceded by Courses 5, 12, and 13.

*The Chemistry of Dye Stuffs.*—Practical and analytical studies upon artificial and natural dyes, and colored fabrics. To follow Courses 11 and 13.

*Analysis of Essential Oils.*—By optical and chemical methods. Must be preceded by Courses 12, 13, and 14.

*Analysis of Nostrums.*—Inquiries into the composition of articles of concealed composition. Must be preceded by Courses 3, 11, 13, and 14.

*Toxicology.*—Additional to Course 13. The recovery of poisons from foods, tissues, and the bodies of animals.

*Detection of adulterations.*—Additional to Courses 3 and 13. By microscopical and chemical methods, the polariscope, etc., applied to foods, condiments, and drugs.

*Cryptogamic Botany.*—Additional to Course 3 in microscopical studies.

*Sugar Analysis.*—Estimations by chemical and optical methods.

*Experimental Researches.*—In the pure sciences, and in the industrial arts.

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#### IV. EXAMINATIONS.

In each of the courses of instruction enumerated (1 to 15) an examination is held at the time the work of the Course is completed by the class. The principal examinations are held in February and June.

After the examination concluding any course of study, the result is reported to the Faculty, and each student enrolled in the class is recorded as Passed, Conditionally Passed, Provisionally Passed, Not Passed, or Absent. The result is not based wholly upon the examination, but upon (1) standing in recitations through the course, (2) diligence and success in the laboratory work, and (3) standing in the examinations. If "Passed" the student receives credit for the completion of the study reported upon. If "Conditionally Passed," he must make up the condition imposed. A record of "Not Passed" requires the student to go over the regular exercises of the study again. A student "Provisionally Passed" is transferred from the immediate charge of the instructor to that of the Faculty, who will withhold credit until better scholarship is attained in other studies. A record of Provisionally Passed may be changed by the Faculty to a record of Passed, Conditionally Passed, or Not Passed, whenever such change shall be justified by the scholarship of the student in his studies in the School. Whenever the Faculty is satisfied that a student does not fulfill the purpose of his studies, he is informed, and his parents or guardians are advised that he should leave the School. If the advice be not regarded it becomes the duty of the Faculty to take mandatory action.

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## V. REQUIREMENTS FOR GRADUATION.

The degree of Pharmaceutical Chemist is conferred upon students who have completed Courses 1 to 14, have obtained credit for examinations in these courses in the manner above stated, and have presented a satisfactory thesis.

THE THESIS must embody the results of research by the student under the direction of the Faculty. The subject is to be selected as early as the first of March, an outline of the proposed investigation is to be presented with references to the literature in the first week of April, and the com-

pleted report, with citations of the authorities in full, is to be ready by the middle of June. For most subjects, the experimental investigation and the literary research make equally heavy demands upon the industry of the student.

Experience in the business of pharmacy is not made a requirement for a degree.

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## VI. A HIGHER DEGREE.

A second degree is offered to resident graduates of this School upon the following requirements, viz., the accomplishment of original research, of an extent representing the average work of a full college year, and of sufficient ability and faithfulness. Applications will be accepted by the Faculty from those who have already shown that they are adapted to engage successfully in investigations. A full record of the work, with citation of authorities, in form for publication, is required. Upon completion of the requirements, the degree of Master of Pharmacy is conferred.

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## VII. TEXT-BOOKS.

*First Year.*—In General Chemistry, Freer. In Chemical Physics, Carhart and Chute. In Qualitative Analysis, Prescott and Johnson. In Pharmacy, the U. S. Pharmacopœia and Remington's Practice. In Botany, Bessey. In Pharmacognosy, Maisch's Organic Materia Medica.

*Second Year.*—In Materia Medica, the Dispensatory. In Quantitative Analysis, Cheever's Select Methods. In Organic Chemistry, Berethsen. In Organic Analysis, Prescott. In Physiological Chemistry, Vaughan. Lyons' Pharmaceutical Assaying is advised.

Students who study in the same room may unite in the use of the dispensatory, and the other larger works.

For information respecting the provision of books of reference, and the use of the library, see page 8.

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## VIII. FEES AND EXPENSES.

THE MATRICULATION FEE is \$10 for residents of Michigan, and \$25 for others. It is paid but once and gives

privileges of permanent membership in any Department of the University.

The ANNUAL FEE is \$25 for residents of Michigan, and \$35 for others. It is paid the first year, and each year thereafter.

In the Chemical Laboratory the student pays by account for the chemicals and apparatus which he uses. The expense varies with prudence and economy, the average amount being about one dollar and twenty cents per week. Advance payment is required from time to time; the first deposit being twenty dollars.

At graduation there is a diploma fee of \$10.

Students obtain board and lodging in private families for from three to five dollars per week. Clubs are also formed, in which the cost of board is from two to three dollars a week. Room rent varies from one dollar to two dollars a week for each student. Students arriving in Ann Arbor can obtain information in regard to rooms and board by calling at the Steward's office.

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Letters of inquiry may be addressed to Professor A. B. Stevens, Secretary, Ann Arbor, Mich.



# STUDENTS IN 1892-93.

## RESIDENT GRADUATES.

### IN THE SCHOOL OF PHARMACY.

NAME.	RESIDENCE.
Shinichi Ando, Ph.C.,	<i>Tokio, Japan.</i>
Emerson Romeo Miller, Ph.C.,	<i>Ann Arbor.</i>

### IN CHEMICAL STUDIES IN THE DEPARTMENT OF LITERATURE, SCIENCE, AND THE ARTS.

NAME.	RESIDENCE.
Richard Fischer, Ph.C.,	<i>New Ulm, Minn.</i>
Bernhard Conrad Hesse, Ph.C.,	<i>Saginaw, East Side.</i>
Phil Garry Hower, Ph.C.,	<i>Sandusky, O.</i>
Roy Demas Young, Phar. M.,	<i>Belleville, N. Y.</i>

### IN THE DEPARTMENT OF MEDICINE AND SURGERY.

NAME.	RESIDENCE.
Robert Bruce Armstrong, Ph.C.,	<i>Saginaw, East Side.</i>
Adam John Burnhardt, Ph.C.,	<i>Hutchinson, Kan.</i>
John Henry Frost, Ph.C.,	<i>Ann Arbor.</i>

## SECOND YEAR STUDENTS.

NAME.	RESIDENCE.
Francis Frederick Adams, Jr.,	<i>Milwaukee, Wis.</i>
Clarence Eugene Barnhart,	<i>Peoria, Ill.</i>
Lou Newton Benton,	<i>Kaneville, Ill.</i>
Fred Newton Chapel,	<i>Grand Blanc.</i>
Sheldon Coleman,	<i>Kalamazoo.</i>
David Lake Davoll, Jr.,	<i>Amesbury, Mass.</i>
William W. Dunning,	<i>Charlotte.</i>
Fred Faber,	<i>Pulaski, O.</i>
Lovell Farnum,	<i>Almont.</i>
John David Fromm,	<i>Toledo, O.</i>
Lillian Missouri Geddes,	<i>Winchendon, Mass.</i>
Abner B. Graham,	<i>Grand Blanc.</i>
L. D. Havenhill,	<i>Fox, Ill.</i>

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Charles Otis Hill, A.B. ( <i>Univ. of Tennessee</i> ),	<i>Knoxville, Tenn.</i>
Charles Elsworth Jackson,	<i>Canal Fulton, O.</i>
Carl Wallace Jones,	<i>Plainwell.</i>
John Henry Jones,	<i>Cumberland, Md.</i>
George Victor Juhler,	<i>Pomeroy, O.</i>
Samuel Robert Knox,	<i>Livonia, Ind.</i>
Charles Merkel,	<i>Charlotte.</i>
George Alexander Morris,	<i>Dexter.</i>
Welles Blackwood Newton,	<i>Bowling Green, O.</i>
Frederick Holland Nickerson,	<i>Greenwich, O.</i>
Delia O'Connor,	<i>Lapeer.</i>
Bessie Gillespie Pierce,	<i>West Bay City.</i>
Karl Edwin Rudolph,	<i>Oberlin, O.</i>
William Scherer,	<i>Rochester, N. Y.</i>
Carl Edward Smith,	<i>Wilmington, N. C.</i>
Charles Henry Steincamp,	<i>Toledo, O.</i>
Rollin S. Tidrick,	<i>Bringham, Ind.</i>
George McAlpine Tyng,	<i>Victoria, Tex.</i>
George Wagner,	<i>New Ulm, Minn.</i>
Silas Grant Wertz,	<i>Mt. Pleasant, Pa.</i>

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### FIRST YEAR STUDENTS.

NAME.	RESIDENCE..
Ransom Sidney Armstrong,	<i>Chelsea.</i>
Homer Carr Blair,	<i>Leslie.</i>
Noah Henry Bleckner,	<i>Oak Harbor, O.</i>
Clifford Egbert Corwin, A.B. ( <i>Marietta Coll.</i> ),	<i>New Suffolk, N. Y.</i>
Charles Ernest Crittenden,	<i>Frankfort.</i>
George Doehne, Jr.,	<i>New Ulm, Minn.</i>
Arthur Wilson Epley,	<i>Franklin, Pa.</i>
Harry Hall Hudson,	<i>Colorado Springs, Col.</i>
William Arthur Jones,	<i>Ann Arbor.</i>
Maynard Elmer Kellogg,	<i>Marshalltown, Ia.</i>
Edgar Livingstone Knapp,	<i>Saginaw.</i>
James W. T. Knox,	<i>Alvarado, Tex.</i>
Sol William Levy,	<i>Detroit.</i>
Edward J. Matthews,	<i>Bryon, O.</i>
Frank Leslie McClintic,	<i>Charlotte.</i>
James C. McGregor,	<i>Birch Run.</i>
Grace Ellen McNoah,	<i>Ann Arbor.</i>
Hannah A. McNoah,	<i>Ann Arbor.</i>
Allen Henry Mead,	<i>Oberlin, O.</i>
Garry Windsor Messenger,	<i>Spring Lake.</i>

Frank Albert Moon,  
John Harry Moore,  
Le Roy Hiram Moss,  
Thomas E. Murdock,  
Marion Franklin Nichols,  
Henry Albert Parmalee,  
Fred Lyle Robertson,  
Ralph Blair Rowland,  
Sebastian Fabian Schick,  
David S. Schweitzer,  
Wilber Benson Scott,\*  
James Seymour,  
Clark Elbert Smith,  
Isaac Franklin Steiner,  
George Charles Steventon,  
Ross Clifford Tatem,  
John Ludwell Tegarden,  
Maude Van Kleek,  
Marvin George Vaughan,  
William Franklin Warner,  
Edward Eugene Washburn,  
Horace Houghton Waters,  
Carl Ernst Louis Weber,  
Barry Wellman,  
Charles Henry Williams, Ph.B., (*Adrian  
College*),  
Parke Ernest Wise,  
Winthrop Hosmer Wright,

*Lowell.*  
*Philadelphia, Pa.*  
*Maple Rapids.*  
*Ypsilanti.*  
*Beach City, O.*  
*Hillsdale.*  
*Amesbury, Mass.*  
*Oberlin, O.*  
*Mount Pulaski, Ill.*  
*Leipsic, O.*  
*Peoria, Ill.*  
*Ann Arbor.*  
*Grand Blanc.*  
*Bluffton, O.*  
*Youngstown, O.*  
*Hartwell, O.*  
*Campbellsburg, Ind.*  
*Ann Arbor.*  
*Ann Arbor.*  
*Belle Flower, Ill.*  
*New London, O.*  
*Monroe.*  
*Toledo, O.*  
*Hastings.*  
  
*Adrian.*  
*Cedar Falls, Ia.*  
*North Adams.*

## REGISTER OF ALUMNI.

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The Chemical Laboratory of the University opened to students in 1856. A course in operative pharmacy was added to the laboratory curriculum in 1860, and was held open to those who had completed at least one of the chemical courses. From the first the laboratory was provided for the use of students of all Departments of the University, so far as chemical studies enter into the curriculum of each, and this provision in common for all the departments has continued to the present. From 1860 to 1868 Certificates of Proficiency were granted to students of any department who had completed with credit one or more of the laboratory courses of experimental study and had passed the chemical examinations. Of those who received the certificates some have followed chemistry as a profession, and their names so far as known, are given with residence and occupation in the Alumni Register of Practicing Chemists of the University.

The laboratory course in operative pharmacy had been taken by students of the Department of Medicine, students of the Department of Literature and Science, and by special chemical students, for eight years, and to the number of one hundred and twenty-one persons, before the organization of a Department of Pharmacy. Of these early students of chemistry and pharmacy a directory of residence and occupation cannot now be given.

The School of Pharmacy was organized in 1868, at first as a polytechnic division of the Department of Literature, Science, and the Arts. The charter of the School, and its power as a college of pharmacy to confer degrees, rest upon

(1) the acts of the Regents of the University in 1868 and in 1876, sustained by (2) the laws of the State in 1851, and (3) the Constitution of Michigan, in accord with the act of Congress providing for the admission of the State. The degree of Pharmaceutical Chemist, with the diploma of graduation in pharmacy, was first conferred in 1869.

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### THE REGISTER FROM 1869 TO 1888.

The Register of the graduates in pharmacy from 1869 to 1888 inclusive, revised last year, is still in print, and will be sent to those who apply for it. Some of the professional changes of the graduates from 1869 to 1888 are given in a supplementary list in this issue, but a complete revision prior to 1889 is not undertaken this year.

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### OTHER CATALOGUES OF GRADUATES AND STUDENTS.

A Catalogue of Chemists, revised from time to time, is furnished to applicants. It is a professional catalogue of practicing chemists and teachers in chemistry who have been educated at this University. The "General Catalogue of Officers and Students of the University," 1837 to 1890, 472 pages price \$1.75 in cloth, can be obtained by addressing the Steward of the University. It contains the names of Non-Graduates in the School of Pharmacy, to the number of 277, with the records of their residence and occupation so far as obtained.

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### THE REGISTER FROM 1889 TO 1891.

In this Register a proprietor in pharmacy is designated as a "pharmacist" only; a joint-proprietor as a "pharmacist in the company of" the house designated; and one employed in pharmacy is recorded as "with" the proprietor

named. The collegiate degrees named are those held in addition to the degree of pharmaceutical chemist (Ph. C.).

It is desired that errors or deficiencies in the Register, especially such as concern residence and occupation, shall be immediately reported with information to the Dean of the Department. The kind services of Alumni are solicited in the endeavor to keep the registration as complete as possible. A mark of interrogation (?) following any name is given as a request for the postoffice address.

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## GRADUATES WITH THE DEGREE OF PHARMACEUTICAL CHEMIST.

1889.

- ABBEY, CHARLES C.—Pharmacist in the firm of Field & Abbey, 314 Main st., Fort Worth, Texas.
- ALLSHOUSE, HARRY A.—Pharmacist in the company of H. A. and G. M. Allshouse, 207 Broadway, Hannibal, Mo.
- ALLWORTH, JAMES E.—Chemist at the Medical and Surgical Sanitarium, Battle Creek, Mich.
- BARRY, BENJAMIN T.—Pharmacist in the company of Ruhl & Barry, Houghton, Mich.
- BLOCK, LEO P.—With Block & Co., wholesale druggists, Chattanooga, Tenn.
- BODEN, EDWIN T.—Pharmacist, 319 Washington st., West Bay City, Mich.
- BOWEN, THOMAS W.—Chemist of Elkhorn Mining Co., Idaho City, Idaho.
- CHAMBERLIN, FRED J.—Pharmacist in the company of F. J. Chamberlin & Bro., 53 West Main st., Battle Creek, Mich.
- CHURCH, STARR K.—M. D., Univ. Mich., 1892.—Sometime Pharmacist with C. M. LaRue, West Bay City, Mich. Physician, Oakland Sanitarium, 1007 Jackson st., Oakland, Cal.
- CROWLEY, CHARLES F.—Sometime Manufacturing Pharmacist with Parke, Davis & Co., Detroit, Mich. Professor of Chemistry in Detroit College, Detroit, Mich. Address 451 Mich. ave.
- DUNN, WILLIAM L.—M. D. 1891.—Assistant to the Professor of Surgery, Univ. Mich., Ann Arbor, Mich.
- EMANUEL, JULIA E.—Prescriptionist, Meyer Bro. & Co., Fort Wayne, Ind.

- FLINT, MERRILL S.—Formerly Pharmacist in charge of the drug department of the Chateauquay Ore and Iron Co., Lyon Mountain, N. Y. With The Racquette River Paper Co., Potsdam, N. Y.
- FRANZ, HENRY S.—Formerly with James R. Hofflin & Co., Minneapolis, Minn. Pharmacist in the firm of M. H. Andrews & Co., North Vernon, Ind.
- FROST, HENRY J.—Formerly Pharmacist, 208 S. Washington ave., Saginaw, E. S., Mich. In Department of Medicine and Surgery, Univ. Mich.
- GRIFFEN, TRUMAN.—Pharmacist with Jas. R. Hofflin & Co., Minneapolis, Minn. Address 2216 Fourth ave., South.
- HEATH, ROLLA M.—In Pharmacy with Gale & Blocki, 34 Washington st., Chicago, Ill.
- HESSE, BERNHARD C.—B. S., Univ. of Mich. 1893.—Sometime Pharmacist with Prall & Jones, East Saginaw, Mich. Assistant in Qualitative Analysis in Univ. Mich. 1890-93. Fellow in Chemistry, University of Chicago, Chicago, Ill.
- HIRTH, GEORGE J., JR.—M. D. 1891—Famulus an der Königlischen chirurgischen Universtätates Klinik, Berlin.
- JANNEY, RUSSELL L.—Pharmacist. Eagle Pharmacy, Paso Robles, San Luis Obispo Co., Cal.
- JENTER, CHRISTIAN G.—Resident Graduate in Metallurgical Chemistry, 1889-90. Assistant in Quantitative Analysis, Univ. Mich., 1890-91. Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y.
- JOHNSON, BURT L.—Pharmacist for H. H. Severance, Middleville, Mich.
- KEITH, FRANKLIN R.—In Pharmacy, Kansas City, Mo.—(?)
- KIRCHGESSNER, WILLIAM C.—Pharmacist with H. and F. Thum. (Ph. C. of '78 and '80), 84 Canal st., Grand Rapids, Mich.
- KRAMER, LEONARD G.—Pharmacist, Chesterton, Ind.
- KRUG, WILLIAM H.—Assistant Chemist in Chemical Division of the U. S. Department of Agriculture, Washington, D. C.
- LOCKWOOD, WILLIAM S.—Pharmacist with Henderson, Jackson, Mich.—(?)
- MEHLHOPP, FRED W.—In the firm of F. A. Tripp & Co., 4 Clark st., Chicago, Ill.
- PARKINSON, FERDINAND E.—Pharmacist in the firm of Parkinson & Parkinson, Saginaw, W. S., Mich.
- ROCKWELL, MARK.—M. D. 1891.—Assistant Physician of Northern Michigan Asylum, Traverse City, Mich., 1891-93. Physician and Surgeon, Room 344 Jones and Summer Block, corner Main and Pipestone sts., Benton Harbor, Mich.
- ROWLAND, CHARLES W.—Pharmacist, 23 South Main st, Oberlin, Ohio.

- SCHETTLER, GEORGE M.—Pharmacist. The successor of A. E. Holt, corner Fort and Cass sts., Detroit, Mich.
- SMITH, OSCAR J.—Manufacturing Chemist with the Stewart & Holmes Drug Co., Seattle, Washington.
- SPENKER, LOUIS J.—Manufacturing Pharmacist with the Wolle Chemical Co., Toledo, O. In charge of the laboratory. Address 356 South Erie st., Toledo, O.
- THOMPSON, JOHN.—Formerly with Myron Calkins, Clinton, Mich. Pharmacist in the firm of S. Van Etta & Son, Hudson, Mich.
- VAN ETTA HARRY S.—Pharmacist in the firm of S. Van Etta & Son, Hudson, Mich.
- VOGEL, ALBERT F.—Pharmacist with Jas. R. Hofflin & Co., Minneapolis, Minn.—until 1892.
- WEIGHTMAN, MATTHEW, JR.—In Pharmacy, Kansas City, Mo.—(?)
- WHELOCK, WILLIAM C.—Manager of East End Drug Store of Colwell Bros., 1324 East Main st., Jackson, Mich.
- WOOD, JOSEPH B.—For some years a Pharmacist. Sometime in chemical studies in Department of Literature, Science and the Arts, Univ. Mich. Now at Patterson, N. J.
- ZEIG, AUGUST C.—Manufacturing Chemist in the Pharmaceutical Laboratory of Clinton E. Worden & Co., San Francisco, Cal.

### 1890.

- ARMSTRONG, ROBERT B.—Sometime Assistant Chemist at New York State Agricultural Experiment Station, Geneva, N. Y. Assistant in Pharmacy, Univ. Mich. 1891-92. In Dept. of Medicine, U. of M.
- BAERT, GEORGE H.—M. D. Univ. Penn., 1893.—Instructor in Chemistry at Purdue University School of Pharmacy, in 1890-91. Address Zeeland, Mich.
- BAKER, CHARLES W.—Pharmacist in the firm of George R. Baker & Son, 205 South Main st., Mt. Vernon, O., also pursuing studies in Kenyon College, O.
- BAKER, FRED W.—President of the Baker-Levy Chemical Co., 167 Wabash ave., Chicago, Ill.
- BOYCE, SAMUEL R.—Instructor in Pharmacy at Kansas State University, Lawrence, Kan.
- COLLINS, WILLIAM E.—Pharmacist in the company of Will E. Collins & Co., Owosso, Mich.
- HAWES, GEORGE S.—Prescriptionist with C. B. Baguley, 61 North State st., Chicago, Ill.
- \*HOLLIS, CHARLES WILLIAM.—Entered Department of Medicine and Surgery, Univ. Mich., Oct., 1890. DIED in March, 1891,
- HUBER, LOUIS H.—Pharmacist with H. Huber, M. D., Ottawa, O.



- ILHARDT, WILLIAM.—Ph. G., St. Louis Coll. Phar., 1888. Pharmacist with Prof. J. M. Good, 2348 Olive st., St. Louis, Mo. Assistant in the Microscopical Laboratory of the St. Louis College of Pharmacy.
- JARMAN, ERNEST M.—In Pharmacy, corner 9th and Francis sts., St. Joseph, Mo.
- KEBLER, LYMAN F.—B. S. Chem. 1881, M. S. 1892—Assistant in Qualitative Chemistry, Univ. Mich. Analytical and Manufacturing Chemist with Smith, Klein & French Co.
- KIRBY, MAURICE S.—Wholesale dealer in fish, Grand Haven, Mich.
- KIRBY, THOMAS E.—Sometime in Pharmacy with H. J. Millburn & Co., Detroit, Mich. Wholesale dealer in fish, Grand Haven, Mich.
- KLINGMAN, THEOPHIL.—M. D. Univ. Mich. 1892. Physician, corner Center and Washington aves., Bay City, Mich. Member of M. S. P. A.
- \*LEVY, MORITZ M.—Sometime a Pharmacist at Charlotte, Mich. DIED.
- MARTZLOFF, CHARLES E.—Member of the firm of William Coulson Drug Co., Buffalo, N. Y. With Jas. A. Darlington, Chemist, 132 William and 553 Clinton sts., Buffalo, N. Y.
- MCGUIRE, BEN J.—In Pharmacy in Auburn, Neb.—(?)
- MEYER, OTTO P.—Manufacturing and Analytical Chemist in charge of the laboratory of Meyer Bros. Drug Co., importers and wholesale druggists, Broadway, Clark ave., and Fourth st., St. Louis, Mo. Member of the St. Louis Club of Microscopists.
- MILNER, THOMAS J.—Pharmacist, Big Rapids, Mich.
- NIERMANN, HERMAN G.—M. D., Univ. Mich., 1892.
- PALMER, WALLACE.—Pharmacist with E. A. Calkins, Ann Arbor, Mich.
- PURTSCHER, CHRISTIAN.—Pharmacist with Frank Inglis, corner Griswold and State sts., Detroit, Mich.
- SCHEUERMAN, WILL M.—Pharmacist with C. E. Spayd, 502 Monroe st., Toledo, O.
- SCHMID, OSCAR F.—Ph. B., 1889.—Sometime Assistant Chemist of Iron and Steel Works at Joliet, Ill. In wholesale drug business, Jackson, Mich.
- SHERRARD, CHARLES C.—Analytical Chemist for Frederick Stearns & Co., Manufacturing Pharmacists, Detroit, Mich.
- THAYER, HENRY A.—Pharmacist with J. L. Thayer, Sherman, N. Y.
- TIBBALS, WILLIAM J.—Sometime Assistant Chemist, at New York State Agricultural Experiment Station, Geneva, N. Y. Graduate student in Chemistry, Univ. Mich. 1891-92. Chemist for J. H. Miller, Analytical and Consulting Chemist, 203 Ellicott st., Buffalo, N. Y.

- WAIT, CORA L.—Dispensing Pharmacist in Northern Michigan Insane Asylum, Traverse City, Mich.
- \*WESTFALL, DEAN M.—Sometime in Pharmacy with C. D. Woodworth, Ellensburg, Wash. DIED, Nov. 10, 1892.
- WISE, CLARENCE H.—Pharmacist in the company of Wise & Bryant, Cedar Falls, Ia.
- WOOD, HOMER R.—Pharmacist with Dr. J. N. McCondless, Prescott, Arizona.
- YOUNG, ROY D.—Phar. M., Univ. M., 1892.—Assistant Chemist at New York State Agricultural Experiment Station, Geneva, N. Y., in 1890-91. Assistant in Pharmacy, Univ. Mich.

### 1891.

- ADAMS, ARTHUR W.—Sometime in Pharmacy with Hall & Hilton, Bay City, Mich. Chemist with Fraser Tablet Triturate Co., New York City.—(?)
- ANDO, SHINICHI.—Assistant Chemist at New York State Agricultural Experiment Station, Geneva, N. Y.
- ASHLEY, WILLIAM F.—Prescriptionist with Mayell-Hopp Co., 198 Euclid ave., Cleveland, Ohio.
- BERRY, ROBERT W.—Huntington, Ind.
- BIRD, HARRY L.—With A. L. Walker, (Ph. C., '79), Pharmacist 413 Woodward ave., Detroit, Mich.
- BRIGGS, PERRY.—Apothecary to the University Hospital, Ann Arbor, Mich.
- BURGESS, HOMER.—Prescriptionist, Emergency Hospital, Washington, D. C. Address 119 New York ave., Northwest.
- CAMPBELL, ARTHUR.—Manager of the Pharmacy of Campbell & Son, Crystal Falls, Mich.
- CHURCHILL, ALFRED P.—With S. P. Churchill, Pharmacist, 36 Euclid ave., Cleveland, O.
- CORBIN, JOHN W.—Graduate student in Metallurgical Chemistry, Univ. Mich., 1891-92. Chemist, New Furnace Illinois Steel Co., South Chicago, Ill.
- DAVIS, FRANK F.—Pharmacist, corner of Eleventh and West sts., Washington, D. C.
- GREAVES, EDITH E.—No. 2226 East Fifth st., Dayton, O.
- GREEN, FRANK A.—D. D. S., Chicago Dental College. Grass Lake, Mich.
- GRIES, JOSEPH M.—Pharmacist, Salt Lake City, Utah.
- HEARNE, JOSEPH C.—Pharmacist with E. D. Stamper, 49 East Short st., Lexington, Ky.
- HITCHCOCK, JOHN E.—Pharmacist in "Medical Hall," Plattsburg, N. Y.

- HUBBARD, JOHN L.—In the firm of Clark & Hubbard, Pharmacists, Grass Lake, Mich.
- HUESTED, FRANK P.—Instructor in Pharmacy in the Albany College of Pharmacy. In service for the New York State Board of Health, Albany, N. Y.
- KAHN, HARRY.—Ph. G., Illinois College of Pharmacy, 1889.—Phar. M., Univ. Mich.\*—Assistant in Pharmacy in the Illinois College of Pharmacy, 40 Dearborn st., Chicago, Ill.
- KENNEDY, EDWARD M.—Pharmacist with George McDonald, Kalamazoo, Mich.
- KING, JOSEPH C.—Manufacturing Chemist with W. D. White & Co., Wilkes Barre, Pa.
- LOUDENBECK, HARRY C.—With J. S. Stiles, druggist, 1140 Millard ave., Chicago, Ill.
- McGEE, THOMAS H.—Lansing, Mich.
- MURRAY, BENJAMIN L.—Assistant Chemist in the New York State Agricultural Experiment Station Geneva, N. Y.
- PECK, FRANK S.—Graduate student in Metallurgical Chemistry in the University of Michigan until April 1892. Chemist in the company of H. L. Hollis & Co., Analytical Chemists and Mining Engineers, 804 Perry-Payne Building, Cleveland, O.
- RUSSELL, DORIAN M.—Prescriptionist in Thum's Pharmacy, 166 West Bridge st., Grand Rapids, Mich.
- SCHMIDT, WALTER K.—Pharmacist in the firm of Thum Brothers & Schmidt, Grand Rapids, Mich. H. Thum, class of '78; F. Thum, class of '80.
- SHEPHERD, FRANK L.—Sometime Assistant Chemist with the William S. Merrell Chemical Co., manufacturers, Cincinnati, O.—In Southern California for the benefit of health.
- SMITH, HENRY F.—Pharmacist with H. Burgess, Oberlin, O.
- SNOW, HENRY P.—Prescriptionist with William H. Quinn, Ballston Spa., N. Y.
- VAN SCHOONHOVEN, CARRIE G.—Pharmacist with J. M. Gries (Ph. C., '91), Salt Lake City, Utah.
- WHITNEY, JAMES W.—Pharmacist with A. W. Twiss, Bethel, Conn.

**1892.**

- ALLEN, HARRIS E.—B. S., Fayette College. Pharmacist with Wil-son & Lee, Morenci, Mich.
- ATWOOD, DANIEL W.—Pharmacist with E. G. Stucky, corner Wylie and Fulton sts., Pittsburg, Pa.
- BIRKMIER, HARRY W.—Pharmacist at 902 Cherry st., Toledo, O.

\*Ph. G., July 25, 1889; Phar. M., June 25, 1891. Has not received the degree of Ph. C.

- CADY, WALTER B.—Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y.
- CARSON, RUDOLPH B.—Chemist in Laboratory of Allan & Pfeiffer Manufacturing Co., 619 North Main st., St. Louis, Mo.
- CADY, BERT E.—Chemist with the Natural Gas Co. Address, box 159 North Indianapolis, Ind.
- COOK, AMOSA D.—Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y.
- DRAKE, FRED D.—With Wm. S. Merrell Chemical Co. In charge of Specialty Department, 175 E. 5th st., Cincinnati, O.
- FISCHER, RICHARD.—Assistant in Qualitative Analysis, Univ. Mich.
- HAAG, ELLIOTT H.—Pharmacist in the company of E. H. Hagg & Co., 601 Monroe st., Toledo, O.
- HEARD, MARY K.—453 Fourth st., Manistee, Mich.
- HOWER, PHIL. G.—Sandusky, O.—(?)
- JACKSON, GEO. R.—A. B., Oberlin College. Detroit, Mich.—(?)
- KELLY, WM. A.—Pharmacist with W. W. Kelly, Ottawa, O.
- KLEIN, JULIUS M.—Chelsea, Mich.—(?)
- LANDERS, ALFRED E.—Fredonia, N. Y.—(?)
- LOHRSTORFER, JOSEPH.—Port Huron, Mich.—(?)
- MILLER, EMERSON R.—Resident-Graduate in Pharmacy, 1892-3.
- PARSONS, JAMES H.—In charge of Analytical Department of J. B. Ford Chemical Works, Wyandotte, Mich.
- PATTISON, GEORGE H.—Chemist with Charles B. Baker & Son, Windsor Park, Ill.
- PUSCH, OSCAR C.—Pharmacist with L. Wilson, 139 South 10th st., Lincoln, Neb.
- ROBINSON, THOMAS E.—Pharmacist at Lansing, Mich.
- SANDFORD, WILLIAM E.—Instructor in Pharmacy, University of Illinois, Champaign, Ill.
- SELTZER, LEONARD A.—Pharmacist with F. W. R. Perry, (Ph. C., 1880). 707 Woodward ave., Detroit, Mich.
- SHEEDY, JOHN P.—Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y.
- SOETJE, OSCAR H.—Pharmacist in the company of Tiarks & Soetje, Monticello, Iowa.
- SUTTON, JOHN B.—Pharmacist with U. D. Bristol & Son, Lapeer, Mich.
- WARNER, GEORGE J.—Birmingham, Mich.
- WELLS, JOSEPH J.—Pharmacist in the firm of J. E. Wells & Son, Athens, Mich.

## CHANGES 1869-1888.\*

- ALLEN, CHALMERS P.—1888.—Pharmacist Midland st., near C. S. & M. depot, West Bay City, Mich.
- \*BAKER, CHARLES.—1887.—DIED in Owosso, Mich., March 1892. For sometime with C. P. Parkhill & Son, Pharmacists at Owosso, Mich.
- BLISS, HALE.—1869.—Late Pharmacist of Cook County Hospital. Engaged for the City Board of Health, Chicago, Ill.
- BURKE, WILLIAM H.—1884.—Pharmacist, Grand River ave., and 291 Woodward ave., Detroit, Mich.
- CHURCHILL, ORIN L.—1876.—Pharmacist in the company of Churchill & Webster, Jamestown, North Dakota.
- CLARK, EDWARD W.—1886.—Ph. G., New York College of Pharmacy, 1884—Pharmacist, 24 East Main st., Amsterdam, N. Y.
- CRAIG, JOHN T.—1884.—Chemist in charge of laboratory, 2 West 47th st., New York, for Caswell, Massey & Co., Manufacturing and Dispensing Pharmacists. Stores at Newport, R. I.; 1121 Broadway, and 578 Fifth ave., New York City.
- DRYFOOS, LOUIS A.—1887.—Ph. D., Zurich, 1891. Dissertation on "Piazine Derivatives."
- GREENE, ARTHUR L.—1882.—Professor of Chemistry and Dean of Purdue School of Pharmacy, LaFayette, Ind.
- GREENE, MORRIS A.—Pharmacist with Baldwin Brothers, Jamestown, North Dakota.
- HIRTH, PAUL H.—1886.—Commercial agent for John Wyeth & Bro., Philadelphia, Pa. Address 101 Summit st., Toledo, O.
- IRWIN, JOHN L.—1880.—M. D., Univ. Mich., 1889. From 1880 to 1887 chemist of the William S. Merrell Chemical Co., Cincinnati, O. In 1889-90, in medical studies in Vienna. Member of American Medical Association. Physician, 230 Third st., Detroit, Mich.
- JENSEN, PAUL C.—1879.—M. D., Univ. Mich., 1882.—Physician, Manistee, Mich.
- \*JOHNSON, JOHN S.—1877.—DIED at Newark, O., May 22, 1891. For some years a Pharmacist in Newark, in company with E. E. Gatchell, Ph. C. (1881), Hudson, Wis.
- KENNEDY, EZRA J.—Engaged in the publishing house of "Pharmaceutical Era," Detroit, Mich.
- KIDDER, SAMUEL, JR.—1888.—In charge for E. L. Scholz, Pharmacist, 16th and Curtis st., Denver, Col.
- LANER, BENJAMIN J.—Pharmacist, 462 East 63d st., Chicago, Ill.
- LEVY, HENRY.—1888.—Secretary and Treasurer of the Baker-Levy Chemical Co., 167 Wabash ave., Chicago, Ill.
- LEWIS, I. GILES—Phar. M., 1891.—Chemical studies, Univ. Mich., 1864-1867. Wholesale druggist and chemist in the firm of Robert Stevenson & Co., 92-94 Lake st., Chicago, Ill.

- McNEIL, MARY.—1882.—Mrs. JOHN O. REED.—B. L., Univ. Mich, 1885. Sometime teacher in the High School at Saginaw.—Ann Arbor, Mich.
- MUMMERY, ARTHUR E.—Pharmacist with Frank Inglis, Detroit. Mich.
- PASSOLT, HERMAN A.—Analytical Chemist. Chemist for Standard Ore Co., Derrett, Minn.
- \*PENGRA, CHARLES P.—1883.—M. D. Univ. Mich., 1881.—DIED in Boston, Mass., Jan. 31, 1892.—For some years Professor of Materia Medica and Botany in the Massachusetts College of Pharmacy, and of Dental Histology and Microscopy in the Boston Dental College.
- PENNINGTON, JOHN E.—1888.—Travelling salesman for the F. A. Davies Co., 1231 Filbert st., Philadelphia, Pa. Home address Detroit, Mich.
- RAYNALE, FRANK B.—1888.—Chemist with Farrand, Williams & Clark, Detroit, Mich.
- REULE, GUSTAVE A.—1887.—In charge of a Pharmacy for A. J. Baumhardt, (Ph. C., 1887) Hutchinson, Kansas.
- SENIER, ALFRED.—1874.—M. D., Univ. Mich., 1874.—Ph. D., Berlin, 1887.—Professor of Chemistry in Queen's College, Galway, Ireland.
- SHAPER, JOHN H.—M. D., Univ. Mich., 1891.—Instructor in Pharmacy in Purdue University, 1888–9.—Physician, 618 Madison st., Toledo, O.
- SMITH, ALBERT W.—1886.—B. S., Case School, 1887.—Ph. D., Zürich, 1891.—Assistant Professor of Chemistry and Metallurgy in the Case School of Applied Science, Cleveland, O.
- SMITH, MARIE.—Student in Hahnemann Medical College, Chicago, Ill. Address 452 35th st., Chicago, Ill.
- SNOW, HERBERT W.—1884.—Late Chemist for Frederick Stearns & Co., Detroit, Mich. In firm of Snow, Lund & Co., wholesale and retail druggists, Omaha, Neb.
- STABLER, LAIRD J.—1885.—B. S., Purdue University, 1890.—Professor of Chemistry and Physics in the Southwest Kansas College, Winfield, Kansas.
- STONE, CLARENCE G.—1877.—For sometime Vice-President of the firm of H. T. Millburn & Co., Manufacturing Pharmacists, 81 Woodward ave., Detroit, Mich. Address:
- RUSE, ANDREW E.—1888.—Pharmacist, Humboldt, Iowa.
- WARREN, WILLARD McK.—1887.—Pharmacist, 1859 Grand, Denver, Col.
- WATERMANN, CHAUNCY N.—1888.—Chemist for the New York Dye Wood Extract and Chemical Co., 55 Beekman st., New York, with works in Brooklyn, N. Y.
- ZWICK, KARL G.—1888.—In 1890–91 a resident student with Prof. R. Fresenius, Wiesbaden, Germany. Pharmacist, 11th and Madison sts., Covington, Ky.

# Alumni Association

OF THE

## SCHOOL OF PHARMACY, UNIVERSITY OF MICHIGAN.

### EXTRACTS FROM THE CONSTITUTION.

*"The objects shall be to preserve friendship \* \* \*; to keep alive our interest in science \* \* \*; to be able to act in unison for the establishment of Pharmacy as a scientific profession \* \* \*; to sustain the interests of thorough education in Pharmacy."*

*"All graduates of this school and all who have been recommended to the Regents for graduation shall be declared members of the association."*

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### OFFICERS.

PRESIDENT	C. C. SHERRARD	'90	Detroit.
VICE-PRESIDENTS	F. H. NICKERSON	'93	Ann Arbor.
	MRS. L. M. GEDDES	'93	Ann Arbor.
	C. G. STONE	'77	Detroit.
RECORDING SECRETARY	L. J. SPENKER	'89	Toledo, Ohio.
CORRESPONDING SECRETARY AND TREASURER	W. PALMER	'90	Ann Arbor.

# Contents.

	PAGE.
The Faculty.....	3
<b>GENERAL INFORMATION:</b>	
The Educational Scope of the School.....	5
The Call for Chemists .....	5
The Utility of Chemical Training.....	6
The Extent of the Required Work.....	6
Laboratory Facilities.....	7
Facilities of the Library.....	7
University Privileges.....	7
Facilities for Practicing Pharmacists, Partial Courses, Opportunities for Research .....	7
Preparation for the State Examination in Pharmacy.....	8
The Requirements for admission.....	9
Admission to the School for a Special Course.....	9
Students Begin at the Opening of the College Year.....	10
As to Business Experience.....	10
<b>ANNOUNCEMENT FOR 1893-94:</b>	
I. Calendar of the College Year.....	11
II. Requirements for Admission.....	11
III. Courses of Instruction:	
Studies of the First Year.....	13
Studies of the Second Year.....	14
Schedule of Hours.....	15
Selected Studies.....	16
Studies in the Third Year.....	16
IV. Examinations .....	17
V. Requirements for Graduation .....	18
VI. A Higher Degree .....	19
VII. Text-Books .....	19
VIII. Fees and Expenses.....	19
<b>STUDENTS IN 1892-93:</b>	
I. Resident Graduates .....	21
II. In Second Year.....	21
III. In First Year .....	22
<b>REGISTER OF THE ALUMNI OF THE SCHOOL OF PHARMACY, with present Resi-         dence and Occupation.....</b>	
<b>THE ALUMNI ASSOCIATION.....</b>	<b>35</b>



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10 11 11  
SCHOOL OF PHARMACY

OF THE

UNIVERSITY OF MICHIGAN

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REGISTER OF ALUMNI

AND

ANNUAL ANNOUNCEMENT.

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TWENTY-SEVENTH YEAR. 1894-1895.

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ANN ARBOR, MICHIGAN:  
PUBLISHED BY THE UNIVERSITY.  
1894.



SCHOOL OF PHARMACY  
OF THE  
UNIVERSITY OF MICHIGAN.

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REGISTER OF ALUMNI  
AND  
ANNUAL ANNOUNCEMENT.

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TWENTY-SEVENTH YEAR. 1894-1895.

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ANN ARBOR, MICHIGAN:  
PUBLISHED BY THE UNIVERSITY.  
1894.

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**THE COURIER OFFICE, PRINTERS AND BINDERS,  
ANN ARBOR, MICHIGAN.**

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# FACULTY.\*

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JAMES B. ANGELL, LL.D.,  
PRESIDENT.

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ALBERT B. PRESCOTT, PH.D., M.D.,  
Director of the Chemical Laboratory, *Professor of Organic Chemistry.*  
DEAN OF THE FACULTY.

WILLIAM H. PETTEE, A.M.,  
Professor of Mineralogy and Economic Geology, *in charge of*  
*Chrystallography.*

VOLNEY M. SPALDING, A.B.,  
*Professor of Botany.*

OTIS C. JOHNSON, A.M., PH.C.,  
*Professor of Applied Chemistry, in charge of Qualitative Analysis.*

PAUL C. FREER, PH.D., M.D.,  
*Professor of General Chemistry.*

ALVISO B. STEVENS, PH.C.,  
*Assistant Professor of Pharmacy.*

SECRETARY OF THE FACULTY.

EDWARD D. CAMPBELL, B.S.,  
Professor of Metallurgical Chemistry, *in charge of Quantitative Analysis.*

DAVID M. LICHTY, M.S.,  
Instructor in General Chemistry, *in charge of Physics.*

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\*For the collegiate year 1894-95. Members of the Faculty of this Department are officers of the University, usually with duties as members of the Faculties of other Departments, and the official titles here given are those of University appointment for all duties. Services proper to the School of Pharmacy are designated in italics.

JULIUS O. SCHLOTTERBECK, B.S. Ph.C.,

*Instructor in Pharmacognosy and in Botany, in charge of Materia Medica.*

WILLIAM F. EDWARDS, B.S.,

*Accountant and Instructor.*

MOSES GOMBERG, B.S.,

*Instructor in Organic Chemistry.*

WILLIAM H. ANDREWS,

*Assistant in Quantitative Analysis.*

PERRY F. TROWBRIDGE, Ph.B.,

*Assistant in Qualitative Analysis.*

L. D. HAVENHILL, Ph.C.,

*Assistant in Pharmacy and Pharmacognosy.*

## ANNOUNCEMENT FOR 1894-95.

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**THE EDUCATIONAL SCOPE OF THE SCHOOL.**—This Department of the University gives training for all branches of pharmacy and for various chemical pursuits of the present time. It makes a well-grounded preparation for service as a manufacturing chemist or as an analyst. The graduate is assured a thorough qualification for the prescription table, and for the most responsible positions in pharmacy. He is fitted to act as the chemist of the medical profession. In respect to the discipline of both the intellectual and the executive powers, the work of the School offers decided advantages in the methods of the laboratory and the classroom.

**THE CALL FOR CHEMISTS.**—In reply to all inquiries as to what demand there is for the services of the graduates of this School, and what opportunities are before them in chemistry, in pharmacy, and in business, **THE REGISTER OF ALUMNI** for the past four years, is presented in this issue. This directory is carefully revised each year. It is made to show as nearly as possible what each graduate is now doing, and to give some mention of what he has been doing since he left college. There is a published Register of all graduates since the degree of Pharmaceutical Chemist was first conferred, in 1869. As a professional directory it is in constant use by those who obtain the services of chemists and pharmacists. There have been six hundred and seventy-nine graduates in twenty-five years. As a rule the alumni engage in chemistry and pharmacy, beginning without delay,

and in due time attaining to posts of credit. It can be seen by each year's issue of the Register how generally the members of the last class, a half year out of college, are already actively engaged in their chosen vocation. The lists of the classes give proof that the training of this School is adapted to meet the wants of the present time. Moreover that the work of the School really gives its students a lasting love of chemical pursuits,—if it did not a larger number would be diverted to the many avenues of business opening everywhere. It is true of this School that the percentage of its graduates who succeed in the practice of their profession is greater than the percentage of its students who succeed in becoming graduates.

**THE UTILITY OF CHEMICAL TRAINING.**—Such is the fertility of artificial production everywhere that commerce cannot go on without the analytical chemist. And nowhere is the ability of the well-trained analyst needed more than it is in pharmacy. Therefore it is that the graduates of this School, qualified as chemists, practiced in qualitative, quantitative, organic, and microscopical work, find so prompt a demand for their services.

**THE EXTENT OF THE REQUIRED WORK.**—As detailed in the following pages, the work of the School is conducted in lectures, recitations, and laboratory practice, organized in a progressive course of at least two collegiate years of nine months each, October to June inclusive, required for graduation. During the college year the student has no time at his disposal for service in a drug store. The required work is by no means such as any student can accomplish in short terms of five months, or while serving in a pharmacy. Those likely to fail in completing the course in two years are permitted, if they are diligent, to arrange the work for three years.

**THE COURSE OF THREE YEARS,** arranged from the beginning, is more especially advisory for those preparing for




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# UNIVERSITY

# SCHOOL OF MUSIC

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 THE University School of Music was established and is conducted by the University Musical Society, of the University of Michigan. The School is conducted upon the most approved educational basis, and its aim is the development of scholarly musicians. Courses are offered in all branches of music and opportunities afforded for the thorough study of the

**PIANO-FORTE**

**ORGAN**

**VOICE**

**HARMONY**

**VIOLIN AND ORCHESTRAL INSTRUMENTS**

**COUNTERPOINT**

**CANON AND FUGUE**

**INSTRUMENTATION**

**COMPOSITION**

**AND THE ART OF CONDUCTING**

Lectures on

**MUSICAL HISTORY**

**MUSICAL ANALYSIS**

**ÆSTHETICS**

**ART OF TEACHING**

**MUSIC IN PUBLIC SCHOOLS**

**CHURCH MUSIC**

as well as occasional lectures on kindred topics are given by members of the University Faculties.

For announcements and further particulars, address the Director,

**ALBERT A. STANLEY, A. M.,**

Professor of Music, University of Michigan.

Ann Arbor, Mich., July, 1894.



special positions in chemical manufacture, or for service as an analytical chemist. Those who graduate at the expiration of two years are offered a year of post-graduate work.

**THE LABORATORIES AND THE WORK REQUIRED IN THEM.**—Of the laboratories of the University, those of chemistry, microscopic botany, pharmacy, and pharmacognosy are used by all the students of this School. All are held to work in the laboratories, from four to six hours daily throughout the course.

**THE LIBRARY.**—The library of the School is shelved with the General Library of the University. It is open to readers from 9 A. M., to 9:30 P. M., daily. The latest works of reference in pharmacy, chemistry, and related sciences, as well as the current periodicals of the profession, are accessible to the student. For the demands of original research all the important repositories of science, in their complete sets, are open to the reader. Several hundred works of reference are provided for the use of students in the Chemical Building and the several laboratories.

**UNIVERSITY PRIVILEGES.**—Admission to classes and laboratories in other Departments of the University is granted to students of the Department of Pharmacy, without additional expense, provided the applicants for such permission be found qualified to take the desired studies, and provided students shall not undertake more work than they can properly perform. About one-half of the obligatory studies of the School of Pharmacy can be obtained in advance in the Department of Literature, Science, and the Arts; or, if obtained in the former, may receive credit upon admission into the latter. Graduates in pharmacy at this School are qualified in the larger portion of the work of the first year in the Department of Medicine and Surgery.

**FACILITIES FOR PRACTICING PHARMACISTS. PARTIAL COURSES, OPPORTUNITIES FOR RESEARCH.**—Pharmacists who desire to pursue certain branches of study for a limited time

in this School may avail themselves of any and all of its facilities, with the helpful coöperation of the Faculty, and subject only to indispensable regulations. Those of responsible age and service can be granted full hours in the laboratories, the use of apparatus, admission to such lectures as may be desired, references to authorities in the library, and appliances for investigation. *Graduates in pharmacy at other schools* may select studies and adapt their work to their individual purposes. *Short terms of study* can be provided for in various ways, under the organization of numerous courses in the University. Students able to take only *One College Year* at the School obtain in this time very substantial advantages for the practice of pharmacy, as follows: (1) lectures on general chemistry, (2) lectures and recitations on pharmacy, (3) a thorough laboratory course in qualitative analysis and study of the action of chemicals on each other, (4) a full laboratory course in pharmacopœial preparations, and (5) a course in botany and pharmacognosy, with a drill upon the crude drugs of the materia medica. Those taking a partial course in the School are subject to the regulation of their studies by the Faculty, and are required to do satisfactory work while they remain, the same as candidates for graduation.

PREPARATION FOR THE STATE EXAMINATIONS IN PHARMACY.—The University grants opportunities to make preparation for the examinations of the boards of pharmacy. The pharmaceutical and chemical lectures and laboratory courses constantly going on, the museums and libraries open every day, and the personal direction granted to every learner, give exceptional advantages to those who would devote themselves wholly to special studies for a given time. Thus in pharmacognosy the learner has access to the classified collections of crude drugs and pharmaceuticals, taking one after another in hand for direct acquaintance. Every encouragement is given to the learner, to help him to

*study for the better practice of pharmacy, not narrowly for an examination.* With well directed study the learner becomes able to take a State examination not only without fear but with satisfaction and benefit. To this end the courses of study named in the paragraph last above are commended. The full course for graduation, much wider than the State examinations, is certainly the best means of preparing for them.

**THE REQUIREMENTS FOR ADMISSION.**—Subject to the regulations above referred to, the University opens its facilities in the Department of Pharmacy to any pharmacist of sufficient age, who has fairly entered into practice, and to persons of other professional experience, (as definitely stipulated on page 12), without the requirement of entrance examination, other than that in the use of our language. But the University does not confer a degree or diploma in pharmacy upon any person who has not passed the prescribed entrance examination, or completed a good high school course, as detailed on page 12, and it is necessary to fulfill this requirement before entering as a candidate for graduation. The entrance examination, in effect, requires the completed course in a high school of good standing, and graduates from any one of the full or four-year courses of such high schools are received upon their diplomas. Those who have their preparation before them are advised that, in general, the “scientific course” of the high school, with Latin and German, will be the most helpful. If the entrance examination is to be taken, the abatement in a part of the Latin and German, for those who have had professional experience, is a limited concession extended to those already in the profession, who have passed by the opportunity for completion of high school studies. Applicants are assured that little can be done by any student during college time in making up deficiencies in the studies required for admission.

**ADMISSION TO THE SCHOOL FOR A SPECIAL COURSE** is to

be obtained only under the requirements defined on page 12, without modification. That is, persons of professional experience are admissible for work in the school, without entrance examinations, except one in English, while others are required to take all the examinations, unless they have high school credentials. Graduates in pharmacy at other schools, and graduates in medicine are received without examination.

THE SCHOOL YEAR BEGINS OCTOBER 1, FOR ALL STUDENTS; and closes on Commencement day, Thursday following the last Wednesday in June. Students of the first year are released the second Friday before Commencement. For special purposes admission may be granted at the beginning of the second semester, February 18, 1895. For the full regular work admission cannot be granted at any other time than at the opening of the first or the second semester, as students are instructed in classes in progressive order. For investigations, students can be received at any time when there is room in the laboratories.

AS TO BUSINESS EXPERIENCE.—The school provides training in pharmaceutical science, not practice in commercial business. Manifestly the work in a professional college is not a substitute for the experience of a pursuit in life. Responsible service in pharmacy is dependent upon both business qualifications and professional competence, each of which is necessary. This school assumes no responsibility for mercantile training, or for experience in the business of pharmacy. A term of service in a drug store has a value which is subject to *much variation*, a value best estimated by the business pharmacist himself, without the intervention of the college. Therefore, experience in the business of pharmacy is not made a requirement for the degree of Pharmaceutical Chemist. When advice is asked respecting the best time in which to take the college work, it is to be said that there are advantages in obtaining some

practical training in a drug store before entering the college course, and there are other advantages in having the college course before giving a very long term of service in pharmacy. *A year of pharmaceutical experience after college is worth several years of the same before college.* But until experience is obtained the graduate in pharmacy is not fully ready for responsible service in commercial practice.

## I. CALENDAR OF THE COLLEGIATE YEAR.

1894.

September 28-<sup>30</sup>~~29~~ Examination for Admission, beginning with all applicants at 9 A. M. of the 28th.  
 October 1. FIRST SEMESTER BEGINS.  
~~NOVEMBER~~ ~~Thanksgiving Recess of three days.~~  
 December 20, (Evening). Holiday Vacation begins.

1895.

January 8.<sup>70</sup> Exercises resumed.  
 February 18.<sup>4</sup> (Evening). FIRST SEMESTER CLOSSES.  
 February 18.<sup>2</sup> SECOND SEMESTER BEGINS.  
 April 18.<sup>6</sup> (Evening). Recess begins, ending April 22, (evening).  
~~June 28.<sup>6</sup> Alumni Day; Classes of 1869 to 1895.~~  
 June 28.<sup>5</sup> COMMENCEMENT IN ALL THE DEPARTMENTS OF THE UNIVERSITY.

## II. REQUIREMENTS FOR ADMISSION.

All applicants for admission must be at least eighteen years of age.

It is advisory to obtain at least a year of practical training in a drug store before entering the college course in pharmacy. The required work in the school leaves the student no time for an engagement in a drug store during the college year.

Applicants who bring diplomas of graduation from standard high schools,\* or certificates of good standing in institutions of the collegiate grade, are admitted without examination.

Applicants who bring evidence of having been engaged in the practice of pharmacy for at least two years may be admitted upon examination in the following branches:

1. ENGLISH.—Each candidate will be examined as to his ability to write English, correct in orthography, punctuation, the use of capitals, grammatical construction, and rhetorical fitness.

2. MATHEMATICS.—*Arithmetic*.—Fundamental Rules, Fractions (common and decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Measures. *Algebra*.—Fundamental Rules, Fractions, Equations of the first degree containing two or more unknown quantities.

3. LATIN.—Jones's First Latin Book, or Harkness's Latin Reader, or an equivalent amount in any other text-book. Instead of Latin, GERMAN to the extent of a full year's study will be accepted. Those who have a speaking and reading acquaintance with German will be held to an examination in the grammar.

Persons over nineteen years of age who bring evidence of having been engaged in the practice of pharmacy, in some capacity, for at least two years, and persons over twenty-one years of age who have had other professional experience approved by the Faculty, may be admitted (for a part or the whole of the course) upon passing the examination in English; but they shall not be eligible for graduation until they have passed the other examinations described in the preceding paragraph.

Other applicants will be examined in the following branches:

1. ENGLISH.—The same as given above.

2. MATHEMATICS.—*Arithmetic*.—The same as given above. *Algebra*.—The same as given above. *Geometry*.—The Elements of Plane Geometry, as given in Olney's New Elementary Geometry, or an equivalent in other authors.

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\*Including those named on pages 45-48 of the University Calendar, and others giving good instruction in all the studies named below.



3. **LATIN OR GERMAN.**—The applicant may offer (1) three years of preparation in Latin; or (2) two years in Latin and one year in German; or (3) one year in Latin and two years in German. Those who offer three years in Latin will be examined in the *Grammar*—a thorough preparation in the elements; in *Prose Composition*—Jones's Exercises in Latin Prose Composition, or an equivalent in some other text-book; and in *Reading*—four books of Cæsar's Commentaries, and six select orations of Cicero, or an equivalent amount in some other text-book. Those who offer two years of Latin will be examined as above, except in the Oration of Cicero. Those who offer one year of Latin will be examined on an amount equivalent to Jones's First Latin Book. Those who offer one year of German should have had daily recitations on the Grammar during that time accompanied by weekly exercises in writing, and the reading of seventy-five pages of some German Reader. Those who offer two years of German should have devoted one year to the reading of some complete work in German literature.

4. **PHYSICS.**—Avery's Natural Philosophy, or an equivalent.

5. **BOTANY.**—The elements of vegetable morphology and physiology as presented in Gray's Lessons, or an equivalent, together with written descriptions of not less than fifty species of plants.

Applicants whose preparatory course of study has not conformed precisely to the requirements above enumerated will be allowed to offer, in place of a portion of these requirements, an equivalent amount in similar branches of study; and if they show, by examination, or by other evidence, that the work in these branches has been sufficient in amount, such branches will be accepted as a substitute for those omitted.

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### III. COURSES OF INSTRUCTION.

#### STUDIES OF THE FIRST YEAR.

1. **THEORY AND PRACTICE OF PHARMACY.**—*Lectures and recitations, two hours each week during the first semester, and five hours each week throughout the second semester.*—History of pharmacopœias, and recitations from the U. S. Pharmacopœia. Specific gravity, weights, measures and their relations to each other. Problems in parts by weight from chemical proportions, weights, volumes and percentages of strength. Apparatus and manipulations used in generating and regulating heat for

pharmaceutical use. Solutions, filtration, decantation, clarification, pulverization, granulation, crystallization, sublimation, percolation, distillation, dialysis, etc. Also the galenicals, infusions, decoctions, extracts, and fluid extracts, oleoresins, tinctures, spirits, solutions, waters, syrups, ointments, suppositories, etc. Apparatus and specimens from the University museum, diagrams, etc., used in illustrating the above subjects.

2. PHARMACEUTICAL PREPARATIONS AND OPERATIVE PHARMACY.

—*Laboratory work, four hours daily, throughout the second semester.*—The minor operations of pharmacy; prescription practice; the galenicals of the pharmacopœia, including solid and fluid extracts; the scale preparations. Distillation of acids and ethers; crystallization of salts; elaboration of chemicals. Preparation of prescriptions. Pharmacopœial methods, and the criticisms upon them. Satisfactory results required in about one hundred and fifty preparations, which represent all of the different classes of preparations of the U. S. Ph. from the simplest to the most difficult. Problems in comparison of chemical proportions with parts by weight and by volume. Manufacture of salts from formulas obtained by chemical calculation. Students are given practical work in applying the pharmacopœial tests to commercial preparations.

3. GENERAL CHEMISTRY.—*Experimental lectures, one hour daily, throughout the first semester, and three hours each week, throughout the second semester.*—The underlying principles of chemical action; descriptive chemistry of the elements and inorganic compounds; molecular constitution; the periodic law of elements; studies of synthetic production. Heat, light, and electricity.

4. PHARMACOGNOSY.—*Two hours a week, throughout the first semester.*—Recitations upon the characters, properties, and manufacture of the dry acids and salts of the pharmacopœia. Practice in the recognition of salts, acids, chemicals and preparations in all their commercial forms, the articles being studied in the hands of the student and under the eye of the teacher.

5. QUALITATIVE ANALYTICAL CHEMISTRY.—*Recitations, one hour daily, and four hours laboratory work daily, throughout the first semester.*—A prefatory drill upon the notation of metallic salts. Laboratory training in reactions of acids and bases, solubilities of salts, and means of separation. Synthetic operations. Chemical equations to be written on demand. After completion of the foregoing, the course in actual analysis of unknown mixtures, solid and liquid. Mixtures presenting agents of oxidation and reduction; and the study of oxidation in the system of notation with positive and negative units of valence. A method of balancing equations by rule is in constant use.

6. BOTANY AND MICROSCOPY.—*Lectures and recitations, two hours*

*per week from January to June inclusive. Practical work in the microscopical laboratory, four hours per week during entire second semester—middle of February to end of year.*—A review of the morphology and physiology of plants. Lectures illustrated by drawings, charts, herbarium specimens and crude medicinal drugs. This, followed by the course in microscopy. Structural botany and the delineation of cell-structure and cell-contents, tissues and tissue-systems. Minute histological study of typical crude drugs and their adulterants. The microscopical examination of powder drugs, foods and condiments, and the detection of adulterations. Reports upon commercial samples obtained in open market. Original investigation upon important crude drugs.

### STUDIES OF THE SECOND YEAR.

7. MATERIA MEDICA.—*Recitations, three times per week, during entire second year.*—The history and classification of medicines. Pharmacopœial preparations and their doses. Physiological actions; antagonists and synergists; poisonous quantities. Symptoms of poisoning and antidotes.

8. PHARMACOGNOSY continued.—*Practice in the laboratory of pharmacognosy, two hours per week during the entire year. Recitations, one hour per week.*—Studies by the class in sections with the teacher. The ready recognition of over 300 of the various articles of pharmaceutical commerce. Examination of powdered drugs for identity. Recitations upon the pharmacognosy of the pharmacopœial drugs in the manner and order outlined in the required text-books. Final review in the identification of *all* the most common drugs found in a drug store.

9. PHARMACOLOGY AND THERAPEUTICS.—Elective.—*Lectures, three hours each week.*—The physiological action of medicines, and their relative position and value in the uses of the physician.

10. CRYSTALLOGRAPHY.—*Thirteen lectures, with practice in determination.*—Study of the systems of crystals, by models and specimens, and classification of the forms found in minerals and in chemical products, the class working in sections.

11. ORGANIC CHEMISTRY.—*Lectures and recitations, five hours each week, throughout the first semester.*—The systematic chemistry of carbon compounds, their molecular structure, synthetic derivation, and chemical description. Method of manufacture and means of analysis. The technology of organic products in general use.

12. QUANTITATIVE CHEMICAL ANALYSIS.—*Lectures, two hours each week with laboratory work, four hours daily throughout the first semester.*—The determination of specific gravities; volumetric estimations; gravi-

metric determinations and separations. The results to come within specified limits of recovery.

13. ORGANIC ANALYSIS.—*Lectures, two hours each week, with laboratory work; four and a half hours daily, throughout the second semester.*—Pharmaceutical assays of vegetable drugs; qualitative practice with the alkaloids and with acids; volumetric estimations; the analysis of nostrums. Toxicology and analysis for poisons. Analysis of butter, lard, and other fats. Sanitary analysis of potable water. Examination of alcoholic liquors. Plant analysis. Elementary organic analysis.

14. PHARMACY.—*Lectures and practice, three hours each week, throughout the entire year.*—The technology of inorganic and organic articles used in pharmacy. Sources, manufacture, commercial history, prevalent impurities, standards of purity and strength, official tests, technical and public uses. *Fac simile* of prescriptions will be thrown upon the screen by the aid of a stereopticon and criticised as regards quantities, doses, errors, incompatibilities, and methods of compounding. Prescription writing, practice in the actual chirography of prescription files. Practical training in dispensing pharmacy at the *Prescription Stand*.

15. *Analysis of Urine.*—Elective.—Laboratory work and lectures.—Normal constituents, their quantitative estimation and due variations. Abnormal constituents, their recognition, estimation and pathological indications. Work by chemical and microscopical methods throughout.

### SCHEDULE OF HOURS.\*

#### FIRST YEAR.

##### FIRST SEMESTER.

8¼ to 9¼ Daily.	Course 5.	Recitations and lectures.
9½ to 10½ Daily.	Course 3.	Lectures.
10½ to 11½ Tuesday, Thursday.	Course 4.	Recitations.
10½ to 11½ Wednesday, Friday.	Course 1.	Lectures.
1 to 5 Daily.	Course 5.	Laboratory.

##### SECOND SEMESTER.

10½ to 12½ Monday, Tuesday, Wednesday, Thursday.	Course 6.	Laboratory.
9½ to 10½ Tuesday. }	Course 6.	Lectures.
9½ to 10½ Wednesday. }		
10½ to 11½ Monday, Friday.	Course 4.	Recitations.
10½ to 11½ Monday, Tuesday, Wednesday,	Course 3.	Lectures.
8¼ to 9¼ Daily.	Course 1.	Lectures.
1½ to 5½ Daily.	Course 2.	Laboratory.

## SECOND YEAR.

## FIRST SEMESTER.

8¼ to 9¼ Tuesday, Thursday.	Course 10. Practice.
9½ to 10½ Monday, Tuesday, Thursday.	Course 14. Lectures.
10½ to 11½ Daily.	Course 11. Lectures.
11½ to 12½ Tuesday, Thursday.	Course 12. Lectures.
11½ to 12½ Monday, Wednesday, Friday.	Course 9. Recitations.
1½ to 5 Daily.	Course 12. Laboratory.
4 to 5 Monday, Wednesday.	Course 10. Lectures.

## SECOND SEMESTER.

9½ to 10½ Monday, Tuesday.	Course 9. Lectures.
8½ to 10½ Daily.	Thesis. Library.
10½ to 11½ Tuesday, Thursday.	Course 8. Recitations.
10½ to 11½ Wednesday, Friday.	Course 13. Lectures.
11½ to 12½ Monday, Wednesday, Friday.	Course 7. Recitations.
10½ to 11½ } Monday, Friday.	Course 14. Lectures and Practice.
2 to 4 }	
1½ to 6 Daily.	Course 13. } Laboratory. Thesis. }

## SELECTED STUDIES.

Students are received for special lines of technical training, with liberty to take such branches as shall be found profitable to them. The several courses described as studies of the third year, below, can be taken by undergraduate students who are prepared for them, when their time permits. Among the shorter laboratory courses offered to students are the following:

*Galenical Preparations and Extemporaneous Pharmacy.*—Additional to Courses 2 and 14.

*Pharmacognosy.*—Ready recognition of medicines and apportionment of quantities by the eye. Briefer than Course 6. Advantageous to the medical student.

*Pharmacopœial Analysis.*—A course in the limit-tests for strength and purity of important medicines.

*The Alkaloids.*—A course, briefer than Course 13, upon the identification of important alkaloids.

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\*A supplementary schedule of hours will be issued in September, 1894.

*Organic Preparations.*—Practical studies of synthetic chemical methods.

*Manufacturing Pharmacy.*—Additional to Course 2. Experimental study of methods of production.

#### **ELECTIVE STUDIES OBTAINED IN THE THIRD YEAR.**

The following named courses are accessible to graduates, and are offered to all who are prepared to take them. They are advanced studies of the same subjects pursued in the First and Second Years, in Courses 1 to 15.

*Organic Combustions.*—Estimation of carbon, hydrogen, nitrogen, etc., in the organic laboratory. Work for one semester or more.

*Organic Preparations.*—The production of synthetic chemicals (additional to Course 2).

*Purification of Chemicals.*—The production of pure chemicals from the impure articles of commerce.

*Drug Assaying.*—Additional to Courses 13 and 14. Standardization of crude drugs, and valuation of chemicals.

*Plant Analysis.*—By systematic methods, for special or general purposes.

*Analysis of Foods.*—Additional to Course 13. The valuation of butter, lard, milk, coffee, flour, etc., and the determination of adulterants.

*Water Analysis.*—Sanitary and industrial analysis of water (additional to Course 13), Mineral Water analyses (Additional to Course 12).

*Iron and Steel Analysis.*—Training for the laboratories of steel works, rolling mills, and iron mines. The work of at least one college year, following Courses 5 and 12.

*Metallurgy and Assaying.*—The fire assay of gold, silver, copper, etc. Studies of the smelting works of these and other metals.

*Analysis of Paints.*—Practical studies of common paints of various colors. Analysis of drying oils. Must be preceded by Courses 5, 12, and 13.

*The Chemistry of Dye Stuffs.*—Practical and analytical studies upon artificial and natural dyes, and colored fabrics. To follow Courses 11 and 13.

*Analysis of Essential Oils.*—By optical and chemical methods. Must be preceded by Courses 12, 13, and 14.

*Analysis of Nostrums.*—Inquiries into the composition of articles of concealed composition. Must be preceded by Courses 6, 11, 13, and 14.

*Toxicology.*—Additional to Course 13. The recovery of poisons from foods, tissues, and the bodies of animals.

*Detection of Adulterations.*—Additional to Courses 6, and 13. By microscopical and chemical methods, the polariscope, etc., applied to foods, condiments, and drugs.

*Cryptogamic Botany.*—Additional to Course 6 in microscopical studies.

*Sugar Analysis.*—Estimations by chemical and optical methods.

*Experimental Researches.*—In the pure sciences, and in the industrial arts.

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#### IV. EXAMINATIONS.

In each of the courses of instruction enumerated (1 to 15) an examination is held at the time the work of the Course is completed by the class. The principal examinations are held in February and June.

After the examination concluding any course of study, the result is reported to the Faculty, and each student enrolled in the class is recorded as Passed, Conditionally Passed, Provisionally Passed, Not Passed, or Absent. The result is not based wholly upon the examination, but upon (1) standing in recitations throughout the course, (2) diligence and success in the laboratory work, and (3) standing in the examinations. If "Passed" the student receives credit for the completion of the study reported upon. If "Conditionally Passed," he must make up the condition imposed. A record of "Not Passed" requires the student to go over the regular exercises of the study again. A student "Provisionally Passed" is transferred from the immediate charge of the instructor to that of the Faculty, who will withhold credit until better scholarship is attained in other studies. A record of Provisionally Passed may be changed by the Faculty to a record of Passed, Conditionally Passed, or Not Passed, whenever such change shall be justified by the scholarship of the student in his studies in the School. Whenever the Faculty is satisfied that a student does not fulfill the purpose of his studies, he is informed, and his parents or guardians are advised that he should leave the

School. If the advice be not regarded it becomes the duty of the Faculty to take mandatory action.

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## V. REQUIREMENTS FOR GRADUATION.

The degree of Pharmaceutical Chemist is conferred upon students who have completed Courses 1 to 14, have obtained credit for examinations in these courses in the manner above stated, and have presented a satisfactory thesis.

THE THESIS must embody the results of research by the student under the direction of the Faculty. The subject is to be selected as early as the first of March, an outline of the proposed investigation is to be presented with references to the literature in the first week of April, and the completed report, with citations of the authorities in full, is to be ready by the middle of June. For most subjects, the experimental investigation and the literary research make equally heavy demands upon the industry of the student.

Experience in the business of pharmacy is not made a requirement for a degree.

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## VI. A HIGHER DEGREE.

A second degree is offered to resident graduates of this School upon the following requirements, viz., the accomplishment of original research, of an extent representing the average work of a full college year, and of sufficient ability and faithfulness. Applications will be accepted by the Faculty from those who have already shown that they are adapted to engage successfully in investigations. A full record of the work, with citation of authorities, in form for publication, is required. Upon completion of the requirements, the degree of Master of Pharmacy is conferred.



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VII. TEXT-BOOKS.

*First Year.*—In General Chemistry, Freer. In Chemical Physics, Carhart and Chute. In Qualitative Analysis, Prescott and Johnson. In Pharmacy, the U. S. Pharmacopœia, Remington's Practice, and U. S. or National Dispensatories. In Botany, Bessey. In Pharmacognosy, Flücikeger's Principles of Pharmacognosy and Maisch's Organic Materia Medica.

*Second Year.*—In Materia Medica, White-Wilcox. In Quantitative Analysis, Cheever's Select Methods. In Organic Chemistry, Berethsen. In Organic Analysis, Prescott. Lyons' Pharmaceutical Assaying is advised.

Students who study in the same room may unite in the use of the dispensatory, and the other larger works.

For information respecting the provision of books of reference, and the use of the library, see page 7.

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VIII. FEES AND EXPENSES.

THE MATRICULATION FEE is \$10 for residents of Michigan, and \$25 for others. It is paid but once and gives privileges of permanent membership in any Department of the University.

The ANNUAL FEE is \$30 for residents of Michigan, and \$40 for others. It is paid the first year, and each year thereafter.

In the Chemical Laboratory the student pays by account for the chemicals and apparatus which he uses. The expense varies with prudence and economy, the average amount being about one dollar and twenty cents per week. Advance payment is required from time to time; the first deposit being twenty dollars.

At graduation there is a diploma fee of \$10.

Students obtain board and lodging in private families for from two and a half to five dollars per week. Clubs are also formed, in which the cost of board is from one dollar and a half to two dollars and a half a week. Room rent

varies from seventy-five cents to two dollars a week for each student. Students arriving in Ann Arbor can obtain information in regard to rooms and board by calling at the Steward's office.

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Letters of inquiry may be addressed to Professor A. B. Stevens, Secretary, Ann Arbor, Mich.

# Students in 1893-94.

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## RESIDENT GRADUATES.

### IN THE SCHOOL OF PHARMACY.

NAME.	RESIDENCE.
L. D. Havenhill, Ph.C.,	<i>Ann Arbor.</i>

### IN CHEMICAL STUDIES IN THE DEPARTMENT OF LITERATURE, SCIENCE, AND THE ARTS.

NAME.	RESIDENCE.
Samuel Robert Boyce, Ph.C.,	<i>Brooklyn.</i>
David Lake Davol, Jr., Ph.C.,	<i>Amesbury, Mass.</i>
Richard Fischer, Ph.C.,	<i>Ann Arbor.</i>
Lillian Missouri Geddes, Ph.C.,	<i>Ann Arbor.</i>
Emerson Romeo Miller, Phar.M.,	<i>Ann Arbor.</i>

### IN THE DEPARTMENT OF MEDICINE AND SURGERY.

NAME.	RESIDENCE.
Robert Bruce Armstrong, Ph.C.,	<i>Saginaw, East Side.</i>
Adam John Burnhardt, Ph.C.,	<i>Hutchinson, Kan.</i>
John Henry Frost, Ph.C.,	<i>Ann Arbor.</i>
Elijah Mark Houghton, Ph.C.,	<i>Antwerp, N. Y.</i>

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## SECOND YEAR STUDENTS.

NAME.	RESIDENCE.
Ransom Sidney Armstrong,	<i>Chelsea.</i>
Clarence Eugene Barnhart,	<i>Peoria, Ill.</i>
George Doehne, Jr.,	<i>New Ulm, Minn.</i>
Arthur Wilson Epley,	<i>Franklin, Pa.</i>
Lovell Farnum,	<i>Almont.</i>
Harry Hall Hudson,	<i>Colorado Springs, Col.</i>
Carl Wallace Jones,	<i>Plainwell.</i>
John Henry Jones,	<i>Cumberland, Md.</i>
Edgar Livingstone Knapp,	<i>Saginaw, East Side.</i>
Samuel Robert Knox,	<i>Livonia, Ind.</i>

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James C. McGregor,	<i>Birch Run.</i>
Grace Ellen McNoah,	<i>Ann Arbor.</i>
Allen Henry Mead,	<i>Oberlin, O.</i>
Garry Windsor Messinger,	<i>Spring Lake.</i>
John Harry Moore,	<i>Philadelphia, Pa.</i>
Thomas E. Murdock,	<i>Ypsilanti.</i>
Marion Franklin Nichols,	<i>Beach City, O.</i>
Delia O'Connor,	<i>Ann Arbor.</i>
Fred Lyle Robertson,	<i>Amesbury, Mass.</i>
James Seymour,	<i>Ann Arbor.</i>
George Charles Steventon,	<i>Youngstown, O.</i>
John Ludwell Tegarden,	<i>Campbellsburg, Ind.</i>
Charles Orlando Topping,	<i>Fenton.</i>
Edward Eugene Washburn,	<i>New London, O.</i>
John Lewis Washburn,	<i>Perry, N. Y.</i>
Horace Houghton Waters,	<i>Monroe.</i>
Carl Ernst Louis Weber,	<i>Toledo, O.</i>
Charles Henry Williams, Ph.B., <i>Adrian</i>	<i>Adrian.</i>
College,	<i>Cedar Falls, Ia.</i>
Parke Ernest Wise,	

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## FIRST YEAR STUDENTS.

NAME.	RESIDENCE.
Henry John Bowerfind,	<i>Adrian.</i>
Claude Melnotte Bunn,	<i>Three Rivers.</i>
Arthur Fremont Calerdine,	<i>Cincinnati, O.</i>
Cornelis De Jonge,	<i>Zeeland.</i>
Gilbert Allen Doty,	<i>Ann Arbor.</i>
Charles Francis Drake,	<i>Chicago, Ill.</i>
Edgar Addison Dunwell,	<i>Plainwell.</i>
Fred Eycleshymer,	<i>Hastings.</i>
Judson L. Follett,	<i>Sioux City, Ia.</i>
Roy Hamilton Gamble,	<i>Moorefield, W. Va.</i>
Colver Detwiller Garwood,	<i>Ann Arbor.</i>
Frederick Glass, Jr.,	<i>Jackson.</i>
Irving Wiley Hicks,	<i>Sherman.</i>
Arthur Maurice Hubert,	<i>Toledo, O.</i>
Leroy Lansing Janes, Jr.,	<i>Ann Arbor.</i>
Chandler Adams Johnson,	<i>Kishwaukee, Ill.</i>
Charles Willis Johnson,	<i>Saint Joe Station, Ind.</i>
John Nimrod Judy,	<i>Moorefield, W. Va.</i>

Fred John Klein,  
Elgin Mallett,  
Fay Melvin Marsh,  
Max Otto Marske,  
Roland Sweetland Mitchell,  
Ernest Gray Reese,  
Walter Scotten,  
Delmore Leroy Sherwood,  
Harry Theophilus Smith,  
Charles Martin Steele,  
Wilbur John Teeters, B.S., *Mount Union*  
*College,*  
Elisha Bird Williams,

*Detroit.*  
*Trenton, Mo.*  
*Lyons.*  
*Ann Arbor.*  
*Brantford, Ont.*  
*Bowling Green, O.*  
*Detroit.*  
*Plain City, O.*  
*Vincent, Pa.*  
*Buchanan.*  
*Alliance, O.*  
*Ann Arbor.*

## Register of Alumni.

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The Chemical Laboratory of the University opened to students in 1856. A course in operative pharmacy was added to the laboratory curriculum in 1860, and was held open to those who had completed at least one of the chemical courses. From the first the laboratory was provided for the use of students of all Departments of the University, so far as chemical studies enter into the curriculum of each, and this provision in common for all the departments has continued to the present. From 1860 to 1868 Certificates of Proficiency were granted to students of any department who had completed with credit one or more of the laboratory courses of experimental study and had passed the chemical examinations. Of those who received the certificates some have followed chemistry as a profession, and their names so far as known, are given with residence and occupation in the Alumni Register of Practicing Chemists of the University.

The laboratory course in operative pharmacy had been taken by students of the Department of Medicine, students of the Department of Literature and Science, and by special chemical students, for eight years, and to the number of one hundred and twenty-one persons, before the organization of a Department of Pharmacy. Of these early students of chemistry and pharmacy a directory of residence and occupation cannot now be given.

The School of Pharmacy was organized in 1868, at first as a polytechnic division of the Department of Literature,

Science, and the Arts. The charter of the School, and its power as a college of pharmacy to confer degrees, rest upon (1) the acts of the Regents of the University in 1868 and in 1876, sustained by (2) the laws of the State in 1851, and (3) the Constitution of Michigan, in accord with the act of Congress providing for the admission of the State. The degree of Pharmaceutical Chemist, with the diploma of graduation in pharmacy, was first conferred in 1869.

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#### THE REGISTER FROM 1869 TO 1888.

The Register of the graduates in pharmacy from 1869 to 1888 inclusive, revised in 1892, is still in print, and will be sent to those who apply for it. Some of the professional changes of the graduates from 1869 to 1888 are given in a supplementary list in this issue, but a complete revision prior to 1889 is not undertaken this year.

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#### OTHER CATALOGUES OF GRADUATES AND STUDENTS.

A Catalogue of Chemists, revised from time to time, is furnished to applicants. It is a professional catalogue of practicing chemists and teachers in chemistry who have been educated at this University. The "General Catalogue of Officers and Students of the University," 1837 to 1890, 472 pages price \$1.75 in cloth, can be obtained by addressing the Steward of the University. It contains the names of Non-Graduates in the School of Pharmacy, to the number of 277, with the records of their residence and occupation so far as obtained.

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#### THE REGISTER FROM 1889 TO 1893.

In this Register a proprietor in pharmacy is designated as a "pharmacist" only; a joint-proprietor as a "pharmacist

in the company of" the house designated; and one employed in pharmacy is recorded as "with" the proprietor named. The collegiate degrees named are those held in addition to the degree of pharmaceutical chemist (Ph.C.).

It is desired that errors or deficiencies in the Register, especially such as concern residence and occupation, shall be immediately reported with information to the Dean of the Department. The kind services of Alumni are solicited in the endeavor to keep the registration as complete as possible. A mark of interrogation (?) following any name is given as a request for the postoffice address.

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## GRADUATES WITH THE DEGREE OF PHARMACEUTICAL CHEMIST.

1889.

- ABBEY, CHARLES C.—Pharmacist in the firm of Field & Abbey, 314 Main st., Fort Worth, Texas.
- ALLSHOUSE, HARRY A.—Pharmacist in the company of H. A. and G. M. Allshouse, 107 Broadway, Hannibal, Mo.
- ALLWORTH, JAMES E.—Chemist at the Medical and Surgical Sanitarium, Battle Creek, Mich.
- BARRY, BENJAMIN T.—Pharmacist in the company of Ruhl & Barry, Houghton, Mich.
- BLOCK, LEO P.—With Block & Co., wholesale druggists, Chattanooga, Tenn.
- BODEN, EDWIN T.—Pharmacist, 512 Midland st., West Bay City, Mich.
- BOWEN, THOMAS W.—Chemist of Elkhorn Mining Co., Idaho City, Idaho.
- CHAMBERLIN, FRED J.—Pharmacist in the company of F. J. Chamberlin & Bro., 53 West Main st., Battle Creek, Mich.
- CHURCH, STARR K.—M.D., Univ. Mich., 1892.—Sometime Pharmacist with C. M. LaRue, West Bay City, Mich. Physician, Raymond, Cal.
- CROWLEY, CHARLES F.—Sometime Manufacturing Pharmacist with Parke, Davis & Co., Detroit, Mich. Professor of Chemistry in Detroit College, Detroit, Mich. Address 451 Mich. ave.
- DUNN, WILLIAM L.—M.D., 1891.—Assistant to the Professor of Surgery, Univ. Mich., Ann Arbor, Mich.



- EMANUEL, JULIA E.—Prescriptionist, Meyer Bro. & Co., Fort Wayne, Ind.
- FLINT, MERRILL S.—Formerly Pharmacist in charge of the drug department of the Chateaufort Ore and Iron Co., Lyon Mountain, N. Y. With the Racquette River Paper Co., Potsdam, N. Y.
- FRANZ, HENRY S.—Formerly with James R. Hofflin & Co., Minneapolis, Minn. Pharmacists in the firm of M. H. Andrews & Co., North Vernon, Ind.
- FROST, HENRY J.—Formerly Pharmacist, 208 S. Washington ave., Saginaw, E. S., Mich. In Department of Medicine and Surgery, Univ. Mich.
- GRIFFIN, TRUMAN.—Pharmacist in the firm of Hofflin Thompson Drug Co., 101 Washington ave. South, Minneapolis, Minn.
- HEATH, ROLLA M.—In Pharmacy with Gale & Blocki, 34 Washington st., Chicago, Ill.
- HESSE, BERNHARD C.—B.S., Univ. of Mich., 1893.—Sometime Pharmacist with Prall & Jones, East Saginaw, Mich. Assistant in Qualitative Analysis in Univ. Mich., 1890-93. Fellow in Chemistry, University of Chicago, Chicago, Ill.
- HIRTH, GEORGE J., JR.—M.D. 1891.—Famulus an der Königlichen chirurgischen Universitäts Klinik, Berlin.
- JANNEY, RUSSELL L.—Pharmacist. Eagle Pharmacy, Paso Robles, San Luis Obispo Co., Cal.
- JENTER, CHRISTIAN G.—Resident Graduate in Metallurgical Chemistry, 1889-90. Assistant in Quantitative Analysis, Univ. Mich., 1890-91. Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y.
- JOHNSON, BURT L.—Pharmacist for W. H. Severance, Middleville, Mich.
- KEITH, FRANKLIN R.—In Pharmacy, Kansas City, Mo.—(?)
- KIRCHGESSNER, WILLIAM C.—Pharmacist with Thum Bro.'s and Schmidt. (Ph.C. of '78, '80 and '91), 84 Canal st., Grand Rapids, Mich.
- KRAMER, LEONARD G.—Pharmacist, Chesterton, Ind.
- KRUG, WILLIAM H.—Assistant Chemist in Chemical Division of the U. S. Department of Agriculture, Washington, D. C.
- LOCKWOOD, WILLIAM S.—Coldwater, Mich.
- MEHLHOPP, FRED W.—Manager Cold Storage Warehouse, 35th and Buttes st., Chicago, Ill.
- PARKINSON, FERDINAND E.—Pharmacist in the firm of Parkinson & Parkinson, Saginaw, W. S., Mich.
- \*ROCKWELL, MARK.—M.D., 1891.—Assistant Physician of Northern Michigan Asylum, Traverse City, Mich., 1891-93. Physician and Surgeon, Room 344 Jones and Summer Block, corner Main and Pipestone sts., Benton Harbor, Mich. DIED, April 22, 1894.
- ROWLAND, CHARLES W.—Pharmacist, 23 South Main st., Oberlin, Ohio.

- SCHETTLER, GEORGE M.—Pharmacist. The successor of A. E. Holt, corner Fort and Cass sts., Detroit, Mich.
- SMITH, OSCAR J.—Manufacturing Chemist with the Stewart & Holmes Drug Co., Seattle, Washington.
- SPENKER, LOUIS J.—Manufacturing Pharmacist with the Wolle Chemical Co., Toledo, O. In charge of the laboratory. Address 356 South Erie st., Toledo, O.
- THOMPSON, JOHN.—Formerly with Myron Calkins, Clinton, Mich. Pharmacists in the firm of S. Van Etta & Son, Hudson, Mich.
- VAN ETTA, HARRY S.—Pharmacist in the firm of Van Etta & Crandall, Burr Oak, Mich.
- VOGEL, ALBERT F.—Pharmacist with Jas. R. Hofflin & Co., Minneapolis, Minn.—until 1892, Chelsea, Mich.
- WEIGHTMAN, MATTHEW, JR.—In Pharmacy, Kansas City, Mo.—(?)
- WHELOCK, WILLIAM C.—Manager of East End Drug Store of Colwell Bros., 1324 East Main st., Jackson Mich.
- WOOD, JOSEPH B.—For some years a Pharmacist. Sometime in chemical studies in Department of Literature, Science, and the Arts, Univ. Mich. Now at Patterson, N. J.
- ZEIG, AUGUST C.—Manufacturing Chemist in the Pharmaceutical Laboratory of Clinton E. Worden & Co., San Francisco, Cal.

**1890.**

- ARMSTRONG, ROBERT B.—Sometime Assistant Chemist at New York State Agricultural Experiment Station, Geneva, N. Y. Assistant in Pharmacy, Univ. Mich. 1891-92. In Dept. of Medicine, U. of M.
- BAERT, GEORGE H.—M. D. Univ. Penn., 1893.—Instructor in Chemistry at Purdue University School of Pharmacy, in 1890-91. Address Zeeland, Mich.
- BAKER, CHARLES W.—Pharmacist in the firm of George R. Baker & Son, 205 South Main st., Mt. Vernon, O., also pursuing studies in Kenyon College, O.
- BAKER, FRED W.—Traveling for John Wyeth & Bro., Philadelphia, Pa.
- BOYCE SAMUEL R.—Instructor in Pharmacy at Kansas State University, Lawrence, Kan.
- COLLINS, WILLIAM E.—Pharmacist in the company of Will E. Collins & Co., Owosso, Mich.
- HAWES, GEORGE S.—Pharmacist in charge of prescription department of Jackson S. Jacobus, Chicago, Ill. Address 75 43d st.
- \*HOLLIS, CHARLES WILLIAM.—Entered Department of Medicine and Surgery, Univ. Mich., Oct., 1890. DIED in March, 1891.
- HUBER, LOUIS H.—Pharmacist with H. Huber, M. D., Ottawa, O.
- ILHARDT, WILLIAM.—Ph.G., St. Louis Coll. Phar., 1888. Pharmacist, 2732 South 13th cor. Lynch st. Demonstrator in Microscopy, St. Louis College of Pharmacy.

- JARMAN, ERNEST M.—In Pharmacy, corner 9th and Francis sts., St. Joseph, Mo.
- KEBLER, LYMAN F.—B.S., Chem., 1881, M.S., 1892—Assistant in Qualitative Chemistry, Univ. Mich. Analytical and Manufacturing Chemist with Smith, Klein & French Co. Philadelphia, Pa.
- KIRBY, MAURICE S.—Wholesale dealer in fish, Grand Haven, Mich.
- KIRBY, THOMAS E.—Sometime in Pharmacy with H. J. Millburn & Co., Detroit, Mich. Wholesale dealer in fish, Grand Haven, Mich.
- KLINGMAN, THEOPHIL.—M.D., Univ. Mich., 1892. Physician, corner Center and Washington aves., Bay City, Mich. Member of M. S. P. A.
- \*LEVY, MORITZ M.—Sometime a Pharmacist at Charlotte, Mich. DIED.
- MARTZLOFF, CHARLES E.—Pharmacist, Manager Darlington's Pharmacy. 181 William st., Buffalo, N. Y.
- MCGUIRE, BEN J.—Pharmacist with Nelson Mallett, Trenton, Mo.
- MEYER, OTTO P.—Manufacturing and Analytical Chemist in charge of the Laboratory of Meyer Bros. Drug Co., importers and wholesale druggists, Broadway, Clark ave., and Fourth st., St. Louis, Mo. Member of the St. Louis Club of Microscopists.
- MILNER, THOMAS J.—Pharmacist, Big Rapids, Mich.
- NIERMANN, HERMAN G.—M.D., Univ. Mich., 1892.
- PALMER, WALLACE.—Pharmacist with E. E. Calkins, Ph.C., '84, Ann Arbor, Mich.
- PURTSCHER, CHRISTIAN.—Pharmacist with Frank Inglis, corner Griswold and State sts., Detroit, Mich.
- SCHEUERMAN, WILL M.—Pharmacist with C. E. Spayd, 502 Monroe st., Toledo, O.
- SCHMID, OSCAR F.—Ph.B., 1889.—Sometime Assistant Chemist of Iron and Steel Works at Joliet, Ill. In wholesale drug business, Jackson, Mich.
- SHERRARD, CHARLES C.—Analytical Chemist for Frederick Stearns & Co., Manufacturing Pharmacists, Detroit, Mich.
- THAYER, HENRY A.—Pharmacist with J. L. Thayer, Sherman, N. Y.
- TIBBALS, WILLIAM J.—Sometime Assistant Chemist, at New York State Agricultural Experiment Station, Geneva, N. Y. Graduate student in Chemistry, Univ. Mich., 1891-92. Chemist for J. H. Miller, Analytical and Consulting Chemist, 203 Ellicott st., Buffalo, N. Y.
- WAIT, CORA L.—Dispensing Pharmacist in Northern Michigan Insane Asylum, Traverse City, Mich.
- \*WESTFALL, DEAN M.—Sometime in Pharmacy with C. D. Woodworth, Ellensburg, Wash. DIED, Nov. 10, 1892.
- WISE, CLARENCE H.—Pharmacist in the company of Wise & Bryant, Cedar Falls, Ia.

WOOD, HOMER R.—Pharmacist with Dr. J. N. McCondless, Prescott, Arizona.

YOUNG, ROY D.—Phar. M., Univ. M., 1892.—Assistant Chemist at New York State Agricultural Experiment Station, Geneva, N. Y., in 1890-91. Assistant in Pharmacy, Univ. Mich.

### 1891.

ADAMS, ARTHUR W.—Sometime in Pharmacy with Hall & Hilton, Bay City, Mich. Chemist with Clinton Pharmaceutical Co., Syracuse, N. Y.

ANDO, SHINICHI.—Sometime Assistant Chemist at New York State Agricultural Experiment Station, Geneva, N. Y. Chemist of Apollo Iron and Steel Co. Apollo, Pa.

ASHLEY, WILLIAM F.—Pharmacist. Grafton, Ohio.

BERRY, ROBERT W.—Huntington, Ind.

BIRD, HARRY L.—Pharmacist. Hotel Benton Block. Benton Harbor, Mich.

BRIGGS, PERRY.—Apothecary to the University Hospital, Ann Arbor, Mich.

BURGESS, HOMER.—Prescriptionist, Emergency Hospital, Washington, D. C. Address 1724 18th st., Northwest.

CAMPBELL, ARTHUR.—Manager of the Pharmacy of Campbell & Son, Crystal Falls, Mich.

CHURCHILL, ALFRED P.—With S. P. Churchill, Pharmacist, 36 Euclid ave., Cleveland, O.

CORBIN, JOHN W.—Graduate student in Metallurgical Chemistry, Univ. Mich., 1891-92. Chemist, New Farnace Illinois Steel Co., South Chicago, Ill.

DAVIS, FRANK F.—Pharmacist, corner of Eleventh and U sts., Northwest, Washington, D. C. Assistant in Pharmacy at the Howard University.

GREAVES, EDITH E.—No. 2226 East Fifth st., Dayton, O.

GREEN, FRANK A.—D.D.S., Chicago Dental College. Grass Lake, Mich.

GRIES, JOSEPH M.—Pharmacist in the firm of Gries Bros., corner South and State sts., Salt Lake City, Utah.

HEARNE, JOSEPH C.—Pharmacist, in firm of Stamper & Hearne, 49 East Short st., Lexington, Ky.

HITCHCOCK, JOHN E.—Pharmacist in "Medical Hall," Plattsburg, New York.

HUBBARD, JOHN L.—In the firm of Clark & Hubbard, Pharmacists, Grass Lake, Mich.

HUESTED, FRANK P.—Instructor in Pharmacy in the Albany College of Pharmacy. In service for the New York State Board of Health, Albany, N. Y.

- KAHN, HARRY.—Ph.G., Illinois College of Pharmacy, 1889.—Phar. M., Univ. Mich.\*—Assistant in Pharmacy in the Illinois College of Pharmacy, 40 Dearborn st., Chicago, Ill.
- KENNEDY, EDWARD M.—Pharmacist with George McDonald, Kalamazoo, Mich.
- KING, JOSEPH C.—Manufacturing Chemist with W. D. White & Co., Wilkes Barre, Pa.
- LOUDENBECK, HARRY C.—With J. S. Stiles, druggist, 1140 Millard ave., Chicago, Ill.
- McGEE, THOMAS H.—Lansing, Mich.
- MURRAY, BENJAMIN L.—Assistant Chemist in the New York State Agricultural Experiment Station, Geneva, N. Y.
- PECK, FRANK S.—Graduate student in Metallurgical Chemistry in the University of Michigan until April, 1892. Chemist in company of H. L. Hollis & Co., Analytical Chemists and Mining Engineers, 804 Perry-Payne Building, Cleveland, O.
- RUSSELL, DORIAN M.—Prescriptionist in Thum's Pharmacy, 166 West Bridge st., Grand Rapids, Mich.
- SCHMIDT, WALTER K.—Pharmacist in the firm of Thum Brothers & Schmidt, Grand Rapids, Mich. H. Thum, class of '78; F. Thum, class of '80.
- SHEPHERD, FRANK L.—Sometime Assistant Chemist with the William S. Merrell Chemical Co., manufacturers, Cincinnati, O.—Student in Leland Stanford, Jr., University, 1892-94. Address Stanford University, California.
- SMITH, HENRY F.—Pharmacist. Southwest cor. Main and College sts., Oberlin, O.
- SNOW, HENRY P.—Prescriptionist with William H. Quinn, Ballston Spa., N. Y.
- VAN SCHOONHOVEN, GARRIE G.—Pharmacist with Ormsby & Martineau Drug Co., Logan City, Utah.
- WHITNEY, JAMES W.—Pharmacist. Manager with H. Fisher & Son, 181 Broadway st., Bridgeport, Conn.

## 1892.

- ALLEN, HARRIS E.—B. S., Fayette College. Pharmacist with Wil-son & Lee, Morenci, Mich.
- ATWOOD, DANIEL W.—Pharmacist with E. G. Stucky, corner Wylie and Fulton sts., Pittsburg, Pa.
- BIRKMIER, HARRY W.—Pharmacist at 902 Cherry st., Toledo, O.
- CADY, WALTER B.—Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y.
- CARSSOW, RUDOLPH B.—Chemist in Laboratory of Allan & Pfeiffer, Manufacturing Co., 619 North Main st., St. Louis, Mo.

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\*Ph.G., July 25, 1889; Phar.M., June 25, 1891. Has not received the degree of Ph.C.

- CODY, BERT E.—Chemist with the Natural Gas Co. Address, box 159 North Indianapolis, Ind.
- COOK, AMOSA D.—Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y.
- DRAKE, FRED D.—Pharmacist with Reed Bros., Argos, Ind.
- FISCHER, RICHARD.—Assistant in Quantitative Analysis, Univ. Mich.
- HAAG, ELLIOTT K.—Pharmacist in the company of E. H. Hagg & Co., 601 Monroe st., Toledo, O.
- HEARD, MARY K.—Northeast, Pa.
- HOWER, PHIL. G.—Sandusky, O.
- JACKSON, GEORGE R.—A.B., Oberlin College. Pharmacist. 111 ½ Braler st., Memphis, Tenn.
- KELLY, WM. A.—Pharmacist with W. W. Kelly, Ottawa, O.
- KLEIN, JULIUS M.—Chelsea, Mich.—(?)
- LANDERS, ALFRED E.—Pharmacist with F. H. Edmonds. Fredonia, N. Y.
- LOHRSTORFER, JOSEPH.—Pharmacist with F. E. Sweetser. Port Huron, Mich.
- MILLER, EMERSON R.—Resident-Graduate in Pharmacy, 1892-3.
- PARSONS, JAMES H.—In the firm of Parsons & Pattison Chemical Co., 305 Pennsylvania ave., Detroit, Mich. Laboratory, Chicago, Ill. Address, Detroit.
- PATTISON, GEORGE H.—Chemist with Charles B. Baker & Son, from 1892-94. In the firm Parsons & Pattison Chemical Co., Chicago, Ill., and Detroit Mich. Address 7720 Bond Ave., Chicago. Member Am. Ph. As.
- PUSCH, OSCAR C.—Sometime Pharmacist with L. Wilson, 139 South 10th st., Lincoln, Neb. With C. F. Pusch, Maysville, Kan.
- ROBINSON, THOMAS E.—Pharmacist at Lansing, Mich.
- SANFORD, WILLIAM E.—Instructor in Pharmacy, University of Illinois, Champaign, Ill.
- SELTZER, LEONARD A.—Pharmacist, with F. W. R. Perry, (Ph.C., 1880). 707 Woodward ave., Detroit, Mich.
- SHEEDY, JOHN P.—Sometime Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y. In Real Estate, Worcester, Mass.
- SOETJE, OSCAR H.—Pharmacist in the company of Tiarks & Soetje, Monticello, Iowa.
- SUTTON JOHN B.—Pharmacist with Dr. Ronga, 137 Ewing Street, Chicago, Ill.
- WARNER, GEORGE J.—Birmingham, Mich.
- WELLS, JOSEPH J.—Pharmacist in the firm of J. E. Wells & Son, Athens, Mich.

**1893.**

- BENTON, LOU NEWTON.—Traveling for Wm. R. White, Bloomington, Ill. Address Kaneville, Ill.
- CHAPEL, FRED NEWTON.—Pharmacist, Charlevoix, Mich.
- COLEMAN, SHELDON.—Pharmacist, Kalamazoo, Mich.
- DAVOLL, DAVID LAKE, JR.—Assistant in Quantitative Analysis, Univ. of Mich.
- FABER, FRED.—Pharmacist, Toledo, Ohio.
- FROMM, JOHN DAVID.—With L. G. Welker, Architect, Marine Building, Toledo, Ohio.
- GEDDES, LILLIAN MISSOURI.—Graduate student in Chemistry.
- GRAHAM, ABNER B.—Pharmacist with A. L. Walker (Ph.C., '79), 413 Woodward ave., Detroit.
- HAVENHILL, L. D.—Assistant in Pharmacy and Pharmacognosy, Univ. of Mich.
- HILL, CHARLES OTIS.—A.B., University of Tennessee.—Pharmacist with Citizens Drug Store, 200 Central ave., Knoxville, Tenn. Address 1008 Rose ave.
- HOUGHTON, ELIJAH MARK.—Studying medicine in U. of M. Dept. of Medicine.
- JACKSON, CHARLES ELSWORTH.—Chemist with W. S. Merrill & Co., 136 Broadway, Cincinnati, Ohio.
- MERKEL, CHARLES W.—Pharmacist Muscogee, Ind. Ter.
- MORRIS, GEORGE ALEXANDER.—Dexter, Mich.
- NEWTON, WELLES BLACKWOOD.—Pharmacist with T. B. Huston, 1833 Adams st., Toledo, O.
- NICKERSON, FREDERICK HOLLAND.—Detroit, Mich.
- PIERCE, BESSIE GILLESPIE.—West Bay City, Mich.
- RUDOLPH, KARL EDWIN.—Pharmacist. Garrettsville, Ohio.
- SCHERER, WILLIAM.—Pharmacist at 349 Hudson ave., Rochester, N. Y.
- SMITH, CARL EDWARD.—Analytical Chemist, with Edward R. Squibb & Sons, Brooklyn, N. Y.
- WAGNER, GEORGE.—Instructor in Botany and Pharmacognosy, School of Pharmacy, Northwestern University.
- WERTZ, SILAS GRANT.—Studying medicine Jefferson Med. Col.

**CHANGES 1869-1888.\***

- ALLEN, CHALMERS P.—1888.—Pharmacist, Midland st., near C. S. & M. depot, West Bay City, Mich.
- \*BAKER, CHARLES.—1887.—DIED in Owosso, Mich., March 1892. For sometime with C. P. Parkhill & Son, Pharmacists at Owosso, Mich.
- BLISS, HALE.—1869.—Late Pharmacist of Cook County Hospital. Engaged for the City Board of Health, Chicago, Ill.

- BURKE, WILLIAM H.—1884.—Pharmacist, Grand River ave., and 291 Woodward ave., Detroit, Mich.
- CHURCHILL, ORIN L.—1876.—Pharmacist in the company of Churchill & Webster, Jamestown, North Dakota.
- CLARK, EDWARD W.—1886.—Ph.G., New York College of Pharmacy, 1884—Pharmacist, 24 East Main st., Amsterdam, N. Y.
- CRAIG, JOHN T.—1884.—Chemist in charge of laboratory, 2 West 47th st., New York, for Caswell, Massey & Co., Manufacturing and Dispensing Pharmacists. Stores at Newport, R. I.; 1121 Broadway, and 578 Fifth ave., New York City.
- DRYFOOS, LOUIS A.—1887.—Ph.D., Zurick, 1891. Dissertation on "Piazine Derivatives."
- GREENE, ARTHUR L.—1882.—Professor of Chemistry and Dean of Purdue School of Pharmacy, LaFayette, Ind.
- GREENE, MORRIS A.—Pharmacist with Baldwin Brothers, Jamestown, North Dakota.
- HIRTH, PAUL H.—1886.—Commercial agent for John Wyeth & Bro., Philadelphia, Pa. Address 101 Summit st., Toledo, O.
- IRWIN, JOHN L.—1880.—M. D., Univ. Mich., 1889. From 1880 to 1887 chemist of the William S. Merrell Chemical Co., Cincinnati, O. In 1889-90, in medical studies in Vienna. Member of American Medical Association. Physician, 230 Third st., Detroit, Mich.
- JENSEN, PAUL C.—1879.—M. D., Univ. Mich., 1882.—Physician, Manistee, Mich.
- \*JOHNSON, JOHN S.—1877.—DIED at Newark, O., May 22, 1891. For some years a Pharmacist in Newark, in company with E. E. Gatchell, Ph.C. (1881), Hudson, Wis.
- KENNEDY, EZRA J.—Engaged in the publishing house of "Pharmaceutical Era," New York, N. Y.
- KIDDER, SAMUEL, JR.—1888.—In charge for E. L. Scholz, Pharmacist, 16th and Curtis st., Denver, Col.
- LAUER, BENJAMIN J., '85.—Pharmacist, 462 East 63d st., Chicago, Ill.
- LEVY, HENRY.—1888.—Secretary and Treasurer of the Baker-Levy Chemical Co., 167 Wabash ave., Chicago, Ill.
- LEWIS, I. GILES—Phar. M., 1891.—Chemical studies, Univ. Mich., 1864-1867. Wholesale druggist and chemist in the firm of Robert Stevenson & Co., 92-94 Lake st., Chicago, Ill.
- MCNEIL, MARY.—1882.—MRS. JOHN O. REED.—B.L., Univ. Mich., 1885. Sometime teacher in the High School at Saginaw.—Ann Arbor, Mich.
- MOODY, L. W.—1878.—Pharmacist. Portland, Oregon. Member of the State Board of Pharmacy (1894-1899).
- MUMMERY, ARTHUR E.—1885.—Pharmacist, cor. Washington and Fourth sts., Ann Arbor, Mich.
- PASSOLT, HERMAN A.—1888.—Analytical Chemist. Chemist for Biwabik Ore Co., Biwabik, Minn.



- \*PENGRA, CHARLES P.—1883.—M.D., Univ. Mich., 1881.—DIED in Boston, Mass., Jan. 31, 1892.—For some years Professor of Materia Medica and Botany in the Massachusetts College of Pharmacy, and of Dental Histology and Microscopy in the Boston Dental College.
- PENNINGTON, JOHN E.—1888.—Traveling salesman for the F. A. Davies Co., 1231 Filbert st., Philadelphia, Pa. Home address Detroit, Mich.
- RAYNALE, FRANK B.—1888.—Chemist with Farrand, Williams & Clark, Detroit, Mich.
- REULE, GUSTAVE A.—1887.—In charge of a Pharmacy for A. J. Baumhardt (Ph.C., 1887), Hutchinson, Kansas.
- SENIER, ALFRED.—1874.—M. D., Univ. Mich., 1874.—Ph.D., Berlin, 1887.—Professor of Chemistry in Queen's College, Galway, Ireland.
- SHAPER, JOHN H.—M. D., Univ. Mich., 1891.—Instructor in Pharmacy in Purdue University, 1888-9.—Physician, 618 Madison st., Toledo, O.
- SMITH, ALBERT W.—1886.—B.S., Case School, 1887.—Ph.D., Zürich, 1891.—Assistant Professor of Chemistry and Metallurgy in the Case School of Applied Science, Cleveland, O.
- SMITH, MARIE.—Student in Hahnemann Medical College, Chicago, Ill. Address 452 35th st., Chicago, Ill.
- SNOW, HERBERT W.—1884.—Late Chemist for Frederick Stearns & Co., Detroit, Mich. In firm of Snow, Lund & Co., wholesale and retail druggists, Omaha, Neb.
- STABLER, LAIRD J.—1885.—B.S., Purdue University, 1890.—Professor of Chemistry and Physics in the Southwest Kansas College, Winfield, Kansas.
- STONE, CLARENCE G.—1877.—For sometime Vice-President of the firm of H. T. Milburn & Co., Manufacturing Pharmacists, 81 Woodward ave., Detroit, Mich., Address 580 Lafayette Ave.
- RUSE, ANDREW E.—1888.—Pharmacist, Humboldt, Iowa.
- WARREN, WILLARD McK.—1887.—Pharmacist, 1859 Grand, Denver, Col.
- WATERMANN, CHAUNCY, N.—1888.—Chemist for the New York Dye Wood Extract and Chemical Co., 55 Beekman st., New York, with works in Brooklyn, N. Y.
- ZWICK, KARL G.—1888.—In 1890-91 a resident student with Prof. R. Fresenius, Wiesbaden, Germany. Pharmacist, 11th and Madison sts., Covington, Ky.

# Index to Name of Graduates

WITH YEAR OF GRADUATION.

---

Abbey, C. C.	'89	Beal, E. R.	'87
Adams, A. W.	'71	Becker, C. L.	'81
Adams, Arthur W.	'91	Benton, Lou Newton	'93
Alcorn, G. S.	'86	Berry, Robert W.	'91
Alder, S. W.	'83	Bird, Harry L.	'91
Allen, C. A.	'88	Birkmier, Harry W.	'92
Allen, Harris E.—B.S.	'92	Bliss, H.	'69
Allen, J. A.	'81	Block, L. P.	'89
Allen, S. E.	'76	Bloomfield, E. M.	'69
Allison, C. W.	'88	Blum, E.	'84
Allmand, C. W.	'84	Bodeman, F. E.	'73
Allmendinger, C. G.	'82	Boden, E. T.	'89
Allshouse, H. A.	'89	Boehme, C. A.	'70
Allworth, J. E.	'89	Boetcher, C. V.	'88
Amerman, A. S.	'71	Boise, E. P.	'69
Ames, J. H.	'76	Boughton, E. G.	'72
Ando, Shinichi	'91	Bowdish, G. A.	'86
Armstrong, I. A.	'79	Bowen, R. F.	'79
Armstrong, R. B.	'90	Bowen, T. W.	'89
Arnold, C. F.	'69	Bower, F. T.	'76
Ashley, William F.	'91	Boyce, S. R.	'90
Atwood, Daniel W.	'92	Boyd, J. P.	'73
Avery, J. H.	'77	Braddock, O. L.	'71
Ayres, J. N.	'79	Briggs, Perry	'91
Babbitt, E. T.	'83	Brockmeier, J. H.	'82
Baert, G. W.	'90	Brooks, F. A.	'78
Bailey, F. C.	'81	Brown, J. G.	'73
Baird, J. W.	'83	Buchanan, W. A.	'70
Baker, C.	'87	Buckham, A. J.	'86
Baker, C. W.	'90	Buckham, J. N.	'76
Baker, F. W.	'90	Burgett, Homer	'91
Banister, J. L.	'86	Burke, W. H.	'84
Bancroft, R. B.	'81	Burness, C. J.	'72
Barie, H. S.	'87	Burroughs, C. S.	'76
Barnabee, H. S.	'83	Burt, J. C.	'75
Barry, B. T.	'89	Cady, Walter B.	'92
Bassett, E. C.	'83	Calkins, E. E.	'84
Baum, C.	'75	Calkins, H. W....	'78
Baumhardt, J.	'87	Campbell, Arthur	'91
Beach, L. F.	'76	Campbell, W. G.	'79

Carey, W. S.	'71	Davis, Frank F.	'91
Carley, G. L.	'82	Davis, C. L.	'85
Carr, L. B.	'87	Davis, L. M.	'74
Carssow, Rudolph B.	'92	Davoll, David Lake Jr.	'93
Cary, C. W.	'70	Dawson, B. F.	'79
Case, E. T.	'84	Dawson, G. V.	'84
Case, M. T.	'69	Dawson, J. H.	'83
Case, T. G.	'70	Dean, G. E.	'82
Chamberlin, F. J.	'89	Denison, J. J.	'82
Chapel, Fred Newton	'93	Denny, J. D.	'83
Church, S. K.	'89	Deyo, L. H.	'82
Church, W. D.	'79	Dickinson, O. B.	'75
Churchill, Alfred P.	'91	Dietrick, C. W.	'76
Churchill, O. L.	'76	Dilworth, M. (Mrs. Comly)	'82
Cirkler, C. H.	'81	Dingley, C. A.	'76
Clark, E. W.	'86	Dixon, G. F.	'77
Clark, F. M.	'85	Dodd, C. W.	'82
Clark, G.	'82	Doehne, W. H.	'87
Clark, J. B.	'80	Dothany, W. A.	'87
Clark, J. T.	'76	Doty, J. W.	'86
Coad, N. G. O.	'75	Doty, W. P.	'86
Cody, Bert E.	'92	Douglas, S. T.	'74
Coffin, C. L.	'84	Drake, Fred D.	'92
Cole, W. W.	'79	Dryfoos, L. L.	'87
Coleman, Sheldon	'93	Duncan, C. G.	'74
Collins, C. F.	'72	Dunn, J. S.	'85
Collins, W. E.	'90	Dunn, W. L.	'89
Condon, W. D.	'86	Dupont, R. S.	'87
Conrad, J. F.	'84	Eastwood, J. F.	'74
Conrads, J. R.	'86	Eaton, H. K.	'86
Cook, Amosa D.	'92	Eaton, J. M.	'79
Cook, G. S.	'73	Eaton, M.	'84
Cooke, F. A.	'83	Eberbach, W. F.	'88
Cooper, H. H.	'84	Eddy, C. H.	'76
Corbin, John W.	'91	Egeroff, A. (Mrs. Fuller)	'78
Cotton, R. M.	'74	Ehrhardt, H.	'74
Coughlin, J.	'76	Ellis, L. A.	'87
Covert, S.	'69	Emanuel, J. E.	'86
Craig, J. T.	'84	Ewell, E. E.	'88
Crampton, C. A.	'82	Ewell, H. P.	'85
Crampton, C. B.	'71	Ewing, F.	'70
Crane, K. (Mrs. Johnson)	'74	Faber, Fred	'91
Croman, J. M.	'87	Fasquelle, L. J.	'82
Crombie, S. M.	'82	Fellows, C. A.	'80
Crowley, C. F.	'89	Felt, G. H.	'86
Cunningham, H.	'82	Field, E. C.	'83
Cunningham, T. N.	'85	Finley, W. G.	'79
Curtis, A. C.	'70	Fischer, Richard	'92
Cushing, G. M.	'84	Fitch, H. A.	'71
Cushman, H. DeP.	'69	Flanders, A. G.	'85
Damon, B. W.	'83	Flick, O. C.	'71
Damon, G. M.	'84	Flint, M. S.	'89
Daniels, G. B.	'86	Foote, C. E.	'80

Ford, C. E.	'70	Harvey, C. B.	'84
Ford, J. M.	'69	Harvey, G.	'74
Fox, A. L.	'69	Hasbrouck, W. A.	'78
Frank, H. O.	'83	Hatch, H. F.	'70
Franz, H. H.	'89	Hauck, T.	'77
Franzee, F. H.	'84	Hauenstein, W.	'83
Fritts, F. F.	'74	Havenhill, L. D.	'93
Fromm, John David.	'93	Hawes, G. S.	'90
Frost, H. J.	'89	Hawley, E. P.	'79
Fuller, L. C.	'76	Hawkes, R. E.	'88
Gage, C. T.	'79	Heard, Mary K.	'92
Gardner, L. H.	'84	Hearne, Joseph C.	'91
Gatchell, E. E.	'81	Heath, R. M.	'89
Gates, W. H.	'77	Heim, H.	'78
Gebauer, C. J.	'80	Heim, W.	'82
Geddes, A. B.	'85	Heimbach, S. J.	'79
Geddes, Lillian Missouri.	'93	Heister, C. W.	'78
Geisler, J. F.	'80	Henderschott, F. E. (Mrs. Henning).	'87
Gentsch, G. T.	'71	Henning, E. L.	'69
George, E. L.	'69	Henning, F. S.	'87
Gessler, M.	'82	Henry, G. C.	'74
Gibson, E. D.	'78	Hesse, B. C.	'89
Gibson, W. M.	'83	Higgins, G. E.	'70
Glazier, F. P.	'80	Higley, W. K.	'83
Godfrey, C. P.	'84	Hill, Charles Otis.	'93
Goecker, L.	'82	Hirth, G. J. Jr.	'89
Goetter, F. B.	'83	Hirth, P. H.	'86
Goodrich, L. A.	'82	Hithchock, John E.	'91
Gower, A. C.	'70	Hoehn, J.	'82
Graham, Abner B.	'93	Hoffman, A. G.	'84
Graham, J. B.	'71	Hoge, W. B.	'84
Greaves, Edith E.	'91	Hollan, L. H.	'69
Green, Frank A.	'91	Hollis, C. W.	'90
Green, M. U.	'76	Holloway, W. J.	'76
Greene, A. L.	'82	Holthoëffer, H. J.	'83
Gries, Joseph M.	'91	Hood, C. H.	'69
Griffen, T.	'89	Hopper, A. G.	'84
Griffith, W. F.	'77	Hopper, C. H.	'75
Griggs, O.	'75	Horine, D. P.	'88
Grimwood, C.	'76	Hosack, H. E.	'83
Gunder, S. H.	'81	Houghton, P. S.	'79
Gundrum, G.	'76	Howell, C. C.	'70
Guy, O. G.	'70	Hower, Phil. G.	'92
Haag, Elliott H.	'92	Hubbard, F. J.	'77
Hagle, P. N.	'70	Hubbard, John L.	'91
Haigh, C. T.	'86	Hubbard, T. H.	'82
Haigh, D. L.	'85	Huber, L. H.	'90
Hale, A. K.	'73	Hudson, C. H.	'74
Hall, G. C.	'83	Hueber, C.	'84
Hallock, A. A.	'77	Huested, Frank P.	'91
Hance, S. S.	'87	Huhn, C. H.	'81
Harrington, H. L.	'81	Humiston, K. P.	'77
Harris, B.	'77	Huntington, H. N.	'74

Huntsman, A.	'74	Landers,, Alfred E.	'92
Ilhardt, W.	'90	Lauer, B. J.	'85
Irwin, J. L.	'80	Leamon, G. P.	'84
Jackman, W. F.	'87	Ledman, O. L.	'83
Jackson, Charles Elsworth	'93	LeFevre, E. L.	'83
Jackson, George R.	'92	Leisenring, W.	'87
James, H. F.	'76	Leist, J. L.	'75
Janney, R. L.	'89	Levy, H.	'88
Jarman, E. M.	'90	Levy, M. M.	'90
Jarvis, J. W.	'69	Lewis, D.	'77
Jensen, P. C.	'79	Lilly, E. A.	'80
Jenter, C. G.	'89	Little, J. R.	'76
Jewett, H. S.	'70	Lobb, A. S.	'77
Johnson, B. L.	'89	Lockwood, W. S.	'89
Johnson, C. S.	'75	Logan, R.	'77
Johnson, J. S.	'77	Lohman, G. H.	'70
Johnson, M. E.	'77	Lohrstorfer, Joseph	'92
Johnson, O. C.	'71	Long, W. L.	'77
Johnston, J. J.	'77	Longstaff, C. H.	'82
Jones, A. A.	'82	Longwell, E. B.	'82
Jones, G. (Mrs. Cuscaden)	'74	Lonstorf, G. J.	'80
Jones, J. R.	'90	Loomis, J. H.	'81
Jones, M. A.	'87	Loudenbeck, Harry C.	'91
Josenhans, R.	'82	Lovin, C. C.	'81
Judson, F. E.	'80	Lupinski, H.	'78
Kahn, Harry	'91	Lynn, J.	'76
Keblor, L. F.	'90	Maas, F. N.	'80
Keith, F. R.	'89	Maltbie, W. F.	'96
Kelly, J. P.	'79	Mann, A.	'80
Kelly, M. C.	'71	Marshall, E. H.	'87
Kelly, Wm. A.	'92	Marshall, E. S.	'80
Kennedy, E. J.	'82	Martzloff, C. E.	'90
Kennedy, Edward M.	'91	Massey, F. W. H.	'76
Kerley, A. P.	'77	Massey, S. F.	'71
Kidder, S. Jr.	'88	McCarthy, R. H.	'73
King, Joseph C.	'91	McCrilles, J. E.	'85
Kirby, M. S.	'90	McCrea, H. F.	'81
Kirby, T. E.	'90	McCullough, R. S.	'80
Kirchessner, W. C.	'89	McGee, Thomas H.	'91
Kirchmaier, G. A.	'87	McGuire, B. J.	'90
Kirk, D.	'73	McKimmie, W.	'70
Klein, Julius M.	'92	McNeil, M.	'82
Klingmann, T.	'90	Mehlhop, F. W.	'89
Knapp, L. B.	'81	Meinert, G.	'86
Knapp, V.	'77	Melcher, A. E.	'85
Koehnle, O. H.	'78	Melville, J. E.	'85
Koon, C. S.	'83	Meredith, E. E.	'82
Koons, C. C.	'79	Merkel, Charles	'93
Kramer, L. G.	'89	Merrell, A. F.	'71
Krause, B. S.	'87	Merrell, O. A.	'70
Krug, W. H.	'89	Merrett, F. D.	'80
Kuhlman, E.	'74	Meyer, T. F.	'78
Lakes, C. N.	'84	Meyer, O. P.	'90

Miller, Emerson R.	'92	Pengra, C. P.	'83
Miller, T. W.	'86	Pennington, J. E.	'88
Miller, J. J.	'78	Perry, F. W. R.	'80
Milner, T. J.	'90	Pett, W. F.	'85
Miner, M. A.	'71	Peyton, C. S.	'84
Mills, C. W.	'70	Phillips, D. A.	'71
Mitchell, A. S.	'87	Pierce, Bessie Gillespie.	'93
Moody, L. W.	'78	Pierron, J. J.	'76
Moore, S. S.	'71	Post, M. E.	'77
Moore, L. G.	'69	Powell, J. Z.	'71
Morgan, J. W.	'76	Prentice, F. F.	'72
Morris, George Alexander	'93	Pryer, C. E. (Mrs. Bartlett)	'82
Morris, J. E.	'82	Pugh, F. B.	'74
Morse, E. H.	'81	Purtscher, C.	'90
Moss, J. C.	'75	Pusch, Oscar C.	'92
Moss, J. R.	'70	Quayle, W. T.	'81
Muir, J. D.	'84	Ranke, W. F., Jr.	'85
Mull, R. F.	'79	Ransom, R. B.	'82
Mummery, A. E.	'85	Raynale, F. B.	'88
Murray, Benjamin L.	'91	Reed, E. M.	'77
Neal, J. C.	'69	Reeve, J. C.	'80
Newman I. N.	'70	Reppert, F.	'72
Newton, Welles Blackwood	'93	Reule, G. A.	'87
Newton, W. E.	'70	Rex, R. G.	'69
Nickerson, Frederick Holland	'93	Reyer, T.	'81
Niermann, H. G.	'90	Rice, E. F.	'85
Noll, M.	'81	Rice, S.	'73
North, S. J.	'85	Riebe, C.	'84
Oaks, J. F.	'69	Rieger, C. F.	'83
Obermann, R. F.	'83	Risser, E. J.	'76
Oechsler, A.	'88	Robinson, Thomas E.	'92
Oles, F. R.	'82	Rockwell, M.	'89
Orth, L. P.	'79	Rockwell, O. M.	'82
Osborn, D. E.	'79	Rodi, C. H.	'80
Ostrander, R. H.	'83	Roe, J. O.	'70
Palmer, G. H. M.	'82	Rogers, A. S.	'85
Palmer, W.	'90	Romans, E. J.	'83
Palmer, H.	'85	Romig, S. V.	'70
Parker, A. S.	'79	Rood, G. W.	'81
Parker, C. E.	'85	Roos, C. L.	'83
Parker, F. C.	'81	Rouse, W. H.	'69
Parker, R. J.	'85	Rowland, C. W.	'89
Parkill, S. E.	'77	Royer, T.	'82
Parrott, B.	'81	Roys, H. M.	'76
Parsons, C. W.	'81	Ruddiman, E. A.	'86
Parsons, H. B.	'76	Rudolph, Karl Edwin	'93
Parsons, James H.	'92	Runyan, E. G.	'86
Passolt, H. A.	'88	Ruse, A. E.	'88
Parkinson, F. E.	'89	Russell, Dorian M.	'91
Pattison, George H.	'92	Rutan, J. A.	'69
Payne, C. E.	'80	Sadler, A.	'69
Pease, T. D.	'84	Salls, J. H.	'75
Peck, Frank S.	'91	Sanford, William E.	'92

Scherer, O.	'86	Stevens, A. B.	'75
Scherer, William	'93	Stevens, J. C.	'83
Schettler, G. M.	'89	Stevens, M. B.	'70
Scheuerman, W. M.	'90	Stevens, R. H.	'77
Schlotterbeck, J. O.	'87	Stevenson, W. E.	'84
Schmid, O. F.	'90	Stewart, T. M.	'76
Schmid, T.	'81	Stinson, E. J.	'82
Schmidt, L. W.	'83	Stivers, E. R.	'86
Schmidt, S.	'81	St. John, W. T.	'84
Schmidt, Walter K.	'91	Stone, C. G.	'77
Schott, A. A.	'84	Styles, M. D.	'71
Schrage, W.	'74	Sutton, John B.	'92
Schumacher, A. C.	'84	Taylor, W.	'70
Seiffardt, L. E.	'78	Teeter, C. W.	'80
Seltzer, Leonard A.	'92	Textor, O.	'81
Senier, A.	'74	Thayer, H. A.	'90
Sexton, W. A.	'81	Thompson, C. W.	'81
Shafer, C. M.	'83	Thompson, F. A.	'81
Shanafelt, F. P.	'83	Thompson, J.	'89
Shaper, J. H.	'88	Thompson, M. S.	'86
Sheedy, John P.	'92	Thornburgh, T. R.	'82
Sheffield, W. C.	'76	Thum, F.	'80
Shepard, O. E.	'74	Thum, H.	'78
Shepherd, Frank L.	'91	Tibbals, W. J.	'90
Sherrard, C. C.	'90	Todd, A. H.	'80
Shubel, C. G.	'87	Tompkins, J. W.	'77
Shuler, D. P.	'87	Topping, G. B.	'87
Smith, A. W.	'85	Townsend, P. L.	'78
Smith, A. D.	'78	Travis, F. A.	'84
Smith, C.	'84	Tremain, H. A.	'75
Smith, Carl Edward	'93	Tupper, E. A.	'85
Smith, E. D.	'86	Turner, D. D.	'81
Smith, Henry F.	'91	Turner, G.	'82
Smith, J. H.	'77	Upjohn, A. (Mrs. Campbell,)	'71
Smith, M. R.	'88	Upjohn, M. (Mrs. Sidman,)	'71
Smith, O. F.	'89	Van den Belt, N.	'71
Smith, S. W.	'76	Vandivert, A. H.	'79
Snow, Henry P.	'91	Van Etta, H. S.	'89
Snow, H. W.	'84	Van Schoonhoven, Garrie G.	'91
Soetje, E.	'88	Van Vanzwaluwenburg, A.	'87
Soetje, Oscar H.	'92	Varnum, E. C.	'83
Soyer, G. P.	'83	Vedder, F. T.	'86
Spencer, E.	'78	Vogel, A. F.	'89
Spencer, H. H.	'85	Waggoner, A. T.	'84
Spencer, J. J.	'83	Wagner, George	'93
Spencer, L. J.	'89	Wait, C. L.	'90
Stabler, L. J.	'85	Walker, A. L.	'79
Staehle, W. C.	'75	Wallace, R. H.	'78
Standart, C. J.	'87	Ware, E. J.	'88
Stanton, E. M.	'69	Ward, R. M.	'81
Stecher, H. W.	'78	Warner, George J.	'92
Stephenson, A. C.	'73	Warren, W. McK	'87
Steiner, S. G.	'85	Waterman, C. N.	'88

Watson, C. M.	'76	Willmarth, G. E.	'75
Watson, J. B.	'80	Wilson, F. L.	'79
Weaver, J.	'74	Wilson, G. E.	'78
Weeks, E. J.	'70	Wilson, O. L.	'81
Wehrli, A. C.	'79	Wilson, W. M.	'71
Weightman, M.	'89	Wise, C. L.	'90
Wells, Joseph J.	'92	Wiseman, F. D.	'88
Wells, W. H.	'75	Wolcott, W. A.	'70
Wesener, J. A.	'88	Wolf, F. C.	'80
Westfall, D. M.	'90	Wood, C.	'75
Wetzel, R. M.	'84	Wood, H. R.	'90
Wheeler, A. M.	'81	Wood, J. B.	'89
Wheelock, W. C.	'89	Wood, L. N.	'79
Whinery, J. B.	'88	Worden, C. E.	'78
White, B. (Mrs. Woodshager)	'83	Wrampelmeier, T. J.	'78
White, W. H.	'82	Wurmb, T. H.	'81
Whitman, A. C.	'75	Wyckoff, W. C.	'84
Whitney, James W.	'91	Wyman, H. S.	'77
Whitlark, W. J.	'76	Young, A. V. E.	'75
Wickwire, F.	'82	Young, A. L.	'77
Wilbur, T. S.	'73	Young, R. D.	'90
Wiley, C. D.	'87	Zeig, A. C.	'89
Wilhite, E. L.	'84	Zerse, O. G.	'82
Williams, S. W.	'81	Zwick, K. G.	'88



# Alumni Association.

OF THE

## SCHOOL OF PHARMACY, UNIVERSITY OF MICHIGAN.

### EXTRACTS FROM THE CONSTITUTION.

*"The objects shall be to preserve friendship \* \* \*; to keep alive our interest in science \* \* \*; to be able to act in unison for the establishment of Pharmacy as a scientific profession \* \* \*; to sustain the interests of thorough education in Pharmacy."*

*"All graduates of this school and all who have been recommended to the Regents for graduation shall be declared members of the association."*

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### OFFICERS.

PRESIDENT .....	C. C. SHERRARD .....	'90 .....	Detroit.
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# Contents.

	PAGE.
The Faculty .....	3
GENERAL INFORMATION:	
The Educational Scope of the School .....	5
The Call for Chemists .....	5
The Utility of Chemical Training .....	6
The Extent of the Required Work .....	6
The Course of Three Years .....	6
Laboratory Facilities .....	7
Facilities of the Library .....	7
University Privileges .....	7
Facilities for Practicing Pharmacists, Partial Courses, Opportunities for Research .....	7
Preparation for the State Examination in Pharmacy .....	8
The Requirements for Admission .....	9
Admission to the School for a Special Course .....	9
Students Begin at the Opening of the College Year .....	10
As to Business Experience .....	10
ANNOUNCEMENT FOR 1894-95 .....	11
I. Calendar of the College Year .....	11
II. Requirements for Admission .....	11
III. Courses of Instruction:	
Studies of the First Year .....	13
Studies of the Second Year .....	15
Schedule of Hours .....	16
Selected Studies .....	17
Studies in the Third Year .....	18
IV. Examinations .....	19
V. Requirements for Graduation .....	20
VI. A Higher Degree .....	20
VII. Text-Books .....	21
VIII. Fees and Expenses .....	21
STUDENTS IN 1893-94:	
I. Resident Graduates .....	23
II. In Second Year .....	23
III. In First Year .....	24
REGISTER OF THE ALUMNI OF THE SCHOOL OF PHARMACY, with present Residence and Occupation .....	26
INDEX TO NAMES OF GRADUATES, with year of graduation .....	38
THE ALUMNI ASSOCIATION .....	45





SCHOOL OF PHARMACY  
OF THE  
University of Michigan.

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REGISTER OF ALUMNI  
AND  
ANNUAL ANNOUNCEMENT.

---

TWENTY-EIGHTH YEAR, 1895-1896.

---

ANN ARBOR, MICHIGAN:  
PUBLISHED BY THE UNIVERSITY.  
1895.



SCHOOL OF PHARMACY

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1895.

**ANN ARBOR:**  
**THE REGISTER PUBLISHING COMPANY, PRINTERS.**  
**1895.**



# BOARD OF REGENTS.

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JAMES B. ANGELL, LL.D.,

PRESIDENT.

		TERM EXPIRES.
HON. ROGER W. BUTTERFIELD,	<i>Grand Rapids,</i>	Dec. 31, 1895.
HON. CHARLES HEBARD,	<i>Pequaming,</i>	" 1895.
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TREASURER.

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HON. HENRY R. PATTENGILL,  
SUPERINTENDENT OF PUBLIC INSTRUCTION.  
(Office at Lansing.)

## THE UNIVERSITY AND THE STATE.

The University of Michigan is a part of the public educational system of the State. The governing body of the institution is a Board of Regents, elected by popular vote for terms of eight years, as provided in the Constitution of the State. In accordance with the law of the State, the University aims to complete and crown the work that is begun in the public schools by furnishing ample facilities for liberal education in literature, science and the arts, and for thorough professional study of medicine, pharmacy, law and dentistry. Through the aid that has been received from the United States and from the State, it is enabled to offer its privileges, without charge for tuition, to all persons, of either sex, who are qualified for admission. While Michigan has endowed her University primarily for the higher education of her sons and daughters, it must be understood that she opens the doors of the institution to all students, wherever their homes. It is in this broad, generous and hospitable spirit that the University has been founded, and that it endeavors to do its work.

# FACULTY.

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JAMES B. ANGELL, LL.D.,  
PRESIDENT.

---

ALBERT B. PRESCOTT, PH.D., M.D., DEAN.  
ALVISO B. STEVENS, PH.C., SECRETARY.

---

**General Chemistry:**

PAUL C. FREER, PH.D., M.D., and DAVID M. LICHTY, M.S.

**Qualitative Analytical Chemistry, and Inorganic Chemical Technology:**

OTIS C. JOHNSON, A.M., PH.C.

**Quantitative Analytical Chemistry and Metallurgical Chemistry:**

EDWARD D. CAMPBELL, B.S.

**Organic Chemistry and Organic Analysis:**

ALBERT B. PRESCOTT, Director of the Chemical Laboratory.

**Synthetic Preparations, Organic Analysis and Drug Assaying:**

MOSES GOMBERG, Sc.D. and PERRY F. TROWBRIDGE,  
PH.B.

**Mineralogy and Crystallography:**

WILLIAM H. PETTEE, A.M.

**The Botanical Laboratory:**

VOLNEY M. SPALDING, A.B., PH.D., Director.

**Botany and Cell Morphology:**

JULIUS O. SCHLOTTERBECK, B.S.(Chem), PH.C., with leave  
of absence in Europe for 1895-96. FREDERICK C. NEW-  
COMBE, B.S., PH.D., in charge for 1895-96.

**Pharmacognosy and Materia Medica:**

JULIUS O. SCHLOTTERBECK, B.S., PH.C., in absentia.  
CHARLES H. WILLIAMS, PH.B., PH.C., for 1895-96.

**Pharmaceutical Technology, Prescriptions, Manufacturing  
Pharmacy:**

ALVISO B. STEVENS, PH.C.

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**Laboratory of Pharmacology, Laboratory of Bacteriology,  
Laboratory of Physiological Chemistry, and Lecture  
Course on Physiology:**

THE FACULTY OF MEDICINE AND SURGERY.

**Mathematics, Physics, Languages, and Elective Studies:**

THE FACULTY OF LITERATURE, SCIENCE, AND THE  
ARTS.

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### ASSISTANTS TO THE FACULTY.\*

**Pharmaceutical Preparations:** JOHN L. WASHBURN, Ph.C.

**Qualitative Analysis:** PERRY F. TROWBRIDGE, Ph.B.

**Quantitative Analysis:** WILLIAM H. ANDREWS, B.S. (Chem.)

**General Chemistry:** RICHARD R. PUTNAM, B.S. (Chem.)

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\* In the year 1894-95.

# Announcement for 1895-96.

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For the Conditions of Admission, see pages 5 to 10.

For Laboratory Studies and Lectures, pages 10 to 17.

The Order of Studies in the Two Years' Course, pages 17 to 19.

The Order of Studies in the Four Years' Course, pages 19 to 20.

Courses in Selected Studies, page 20.

Studies in Research, page 17.

Requirements for Graduation, page 22.

Fees and Expenses, page 26.

The Positions held by Graduates, pages 32 to 79.

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## CALENDAR OF THE COLLEGE YEAR.

1895.

September 28-30. *Examination for Admission*, beginning with all applicants at 9 A. M. of the 28th.

October 1. FIRST SEMESTER BEGINS.

NOVEMBER — Thanksgiving recess of three days.

December 20. (Evening). Holiday Vacation begins.

1896.

January 7. Exercises resumed.

February 14. (Evening). FIRST SEMESTER CLOSES.

February 17. SECOND SEMESTER BEGINS.

April 11. (Evening). Recess begins, ending April 22, (Evening).

June 25. COMMENCEMENT IN ALL THE DEPARTMENTS OF THE UNIVERSITY.

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## REQUIREMENTS FOR ADMISSION.

### ADMISSION TO THE COLLEGE COURSE OF TWO YEARS.

Leading to the Degree of Pharmaceutical Chemist.

Applicants for admission must be at least eighteen years of age.

It is of advantage to obtain at least a year of practical training in a drug store before entering the college course in pharmacy. The required work in the school leaves the student no time for an engagement in a drug store during the college year.

**ADMISSION OF GRADUATES OF HIGH SCHOOLS.**—Applicants holding diplomas of graduation from any of the full courses of the schools visited by this University and included in the list on pages 48 to 51 of the University Calendar are admitted without examination, as are, also, graduates of four-year courses of other high schools of good standing.

**ADMISSION FROM COLLEGES.**—Students who have completed at least one year's work in an approved college of literature and science, and who bring explicit and official certificates describing their course of study and scholarship and testifying to their good character, will be admitted without examination. Graduates of colleges of literature and science, and graduates of colleges of medicine or pharmacy, are also admitted without being examined. Concerning admission to Advanced Standing in the college studies, see page 10.

**EXAMINATIONS FOR ADMISSION.**—These are upon the following named subjects:

1. **ENGLISH.**—Exercises in the writing of English with correctness. Especial regard is paid to orthography, punctuation, use of capitals, grammatical construction, and rhetorical fitness.

2. **MATHEMATICS.**—*Arithmetic.*—Fundamental rules, Fractions, (common and decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Measures. *Algebra.*—Fundamental Rules, Fractions, Equations of the First Degree containing two or more unknown quantities. *Geometry.*—The elements of Plain Geometry as given in Olney's New Elementary Geometry, or an equivalent in other authors.

3. **LATIN OR GERMAN.**—The applicant may offer (1) three years of preparation in Latin; or (2) two years in Latin and one year in German; or (3) one year in Latin and two years in German. Those who offer

three years in Latin are examined in the *Grammar*—a thorough preparation in the elements; in *Prose Composition*—Jones's Exercises in Latin Prose Composition, or an equivalent in some other text-book; and in *Reading*—four books of Caesar's Commentaries and six select Orations of Cicero, or an equivalent amount in some other text-book. Those who offer two years of Latin are examined as above, except in the Orations of Cicero. Those who offer one year of Latin are examined in an amount equivalent to Jones's First Latin Book. Those who offer one year of German should have had daily recitations on the Grammar during that time, accompanied by weekly exercises in writing, and the reading of seventy-five pages of some German reader. Those who offer two years of German should have devoted one year to the reading of some complete work of literary art.

4. PHYSICS.—Carhart and Chute's Elements of Physics, or an equivalent.

5. BOTANY.—Practical exercises in the study of common plants, so conducted as to secure a familiar acquaintance with the essential facts of vegetable morphology, physiology, and relationship. The method pursued in Spalding's Introduction to Botany will indicate the kind of work desired.

EXAMINATIONS FOR ADMISSION OF THOSE WHO HAVE BEEN ENGAGED IN THE PRACTICE OF PHARMACY.—Applicants who bring evidence of having been engaged in the practice of pharmacy for at least two years may be admitted upon examination in the following branches:

1. ENGLISH.—The same as given above.

2. MATHEMATICS.—*Arithmetic*.—The same as given above. *Algebra*.—The same as given above.

3. LATIN OR GERMAN.—In Latin, Jones's First Latin Book or an equivalent amount in any other text-book. Instead of Latin, German to the extent of a full year's study is accepted. Those who have a speaking and reading acquaintance with German are held to an examination in the Grammar.

#### ADMISSION OF STUDENTS NOT CANDIDATES FOR A DEGREE.

To take selected studies.

Persons over nineteen years of age who bring evidence of having been engaged in the practice of pharmacy for at least two years may be admitted to studies upon passing the examination in English as stated on page —.

The same privilege is accorded to persons over twenty-one years of age who have had professional experience approved by the Faculty, whether it have been in pharmacy or in another pursuit, the same examination being required as to the correctness of English writing.

Students admitted to studies under these provisions are not candidates for any degree and do not become eligible for graduation until they have passed all the examinations of entrance to the course leading to the degree which they seek to obtain. Those admitted as students not candidates for a degree, can become eligible for graduation with the degree of Pharmaceutical Chemist when they have passed the Examinations for Admission of those who have been engaged in the practice of pharmacy. To become eligible for graduation with the degree of Bachelor of Science, the student must meet the full entrance requirements of the course for that degree, as stated below.

Students not candidates for a degree may select such studies as they are found prepared to pursue, under the regulations of the Faculty. Courses of selected studies are arranged for students, to suit their purposes and qualifications. Selected studies may be continued so long as they are carried with success and profit; in the judgment of the Faculty.

#### **ADMISSION TO THE COLLEGE COURSE OF FOUR YEARS.\***

Leading to the Degree of Bachelor of Science in Pharmacy.

Applicants must be at least sixteen years of age.

**ADMISSION OF GRADUATES OF HIGH SCHOOLS.**—Graduates from the B. S. course in the preparatory schools visited

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\*The requirements for admission to this course are and will be in every respect the same as those for admission to the course leading to the degree of Bachelor of Science, in the Department of Literature, Science and the Arts. See University Calendar, 1894-95, page 41. A revision of the requirements for entrance to the B. S. course has been made by the University, and is now being published, to go into effect in 1897. The statement can be obtained by applying to the Secretary of the University.



and approved by this University, as named on pages 48 to 51 of the Calendar for 1894-95, making application within a year and three months after their graduation, and bringing a certificate from the school stating that they have sustained examinations and are presented as candidates, will be admitted without further examination.

**ADMISSION FROM COLLEGES.**—Students who have completed at least one year's work in an approved college of literature and science, and who bring explicit and official certificates describing their course of study and scholarship and testifying to their good character, will be admitted without examination. Graduation from a professional school, or from the two year's course in this School, does not relieve the applicant from examination.

**EXAMINATIONS FOR ADMISSION TO THE COURSE OF FOUR YEARS.**—In each of the following named subjects, to the extent more fully stated for each subject in the University Calendar, page 41.

1. **ENGLISH LANGUAGE, COMPOSITION and RHETORIC.**
2. **HISTORY:** Meyer's General History, or an equivalent; and the History of the United States as far as the close of the Revolutionary War.
3. **MATHEMATICS.** Algebra, to quadratic equations inclusive; Geometry, plane, solid and spherical. (Plane Trigonometry is advisory, for the support of physics in the first semester in college.)
4. **LATIN, GERMAN, FRENCH.** Of these three languages, two are required. The candidate may offer Latin and German, or German and French, or Latin and French. It is expected that as much as two years will be given to the preparation in each of the two languages offered.
5. **PHYSICS.** An amount represented by Carhart and Chute's Physics.
6. **BOTANY.** Practical studies, such as are directed in Spalding's Introduction to Botany.
7. Two additional sciences, taken from Chemistry, Geology, Zoology, Physiology, Physical Geography, and Astronomy.

Admission Conditions are subject to the rules given in the Calendar of the University, 1894-95, page 122.



n of the work assigned. The satisfactory for one semester, in examination held at the hour of credit toward lecture or a recitation, to maintain the will take in all as much laboratory work is given with both recitation study, and the necessity by himself is demanded therefore an hour of credit in a course of exercises. The several in the order in which student. The number given in the Department

#### ACY.

of Pharmacy.—Three Recitations.—Professor STEVENS measures and their relations from chemical proportions, weight. Apparatus and manipulation for pharmaceutical use. Filtration, pulverization, granulation, distillation, dialysis, etc. University museum, diagrams. Pharmacy and Pharmaceutical Preparations.—Daily recitations, making ten hours preceded by Course A in Analytical Chemistry; laboratory study of pharmaceutical manufacturing procedures. The hundred and fifty preparations re-

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**ADMISSION TO ADVANCED STANDING IN COLLEGE STUDIES.**

Students who have gained admission to the School may apply for credit in any of the college studies which they have pursued in another college, or in a high school whose graduates are admitted. Such application should be made to the Dean at the time of entering the School, and will be referred to the professors in charge of the studies in which credit is asked. In each case the professor will determine how much credit, if any, can be given. To this end he may appoint a time for examination of the applicant upon the study. Applicants are desired to bring explicit credentials as to the work done. Students in the four year's course, applying for advanced credits, will govern their applications according to the rules given in the University Calendar on page 44, (1894-95), making application to the Dean of this Department. Credits are received from the other Departments, and from the Summer School, of this University. Not more than twelve hours of credit from the Summer School can be applied toward the degree of Bachelor of Science. Credits from other Schools of Pharmacy are adjusted separately for each study, as stated above. Owing to differences in the order and extent of the studies, credits cannot be accounted for in years of pharmaceutical college study.

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**COURSES OF INSTRUCTION,**

**INCLUDING LECTURES, LABORATORY STUDIES, AND RECITATIONS.**

The amount of work in each course is expressed in *hours*, an "*hour*" being *one exercise a week for one semester*, four-and-a-half months. A lecture or recitation is one hour in length. A laboratory exercise employs three hours, more or less, being continued until the work assigned

to one exercise, or a due proportion of the work assigned to the course, has been completed. The satisfactory completion of *one exercise a week for one semester*, including a sufficient standing in the examination held at the end of the semester, constitutes one *hour of credit* toward graduation. It is intended that a lecture or a recitation, with the personal study necessary to maintain the student's standing in the subject, will take in all as much time as a laboratory exercise. Laboratory work is given with recitations or lectures, or with both recitation and lecture, in the same course of study, and the necessary text-book work of the student by himself is demanded for the recitation or lecture. Therefore an *hour of credit* has the same value whether obtained in a course of lectures or in a course of laboratory exercises. The several courses in any subject are lettered in the order in which they are to be taken by the student. The numbers in brackets are numbers of courses given in the Department of Literature and Science.

### PHARMACY.

COURSE A.—*Theory and Practice of Pharmacy.*—Three hours a week. Second Semester. Lectures and Recitations.—Professor STEVENS.

History of pharmacopœias and recitations from the U. S. Pharmacopœia. Specific gravity, weights, measures and their relations to each other. Problems in parts by weight from chemical proportions, weights, volumes and percentages of strength. Apparatus and manipulations used in generating and regulating heat for pharmaceutical use. Solutions, filtrations, decantation, clarification, pulverization, granulation, crystallization, sublimation, percolation, distillation, dialysis, etc. Apparatus and specimens from the University museum, diagrams, etc., are used in illustrating the above subjects.

COURSE B.—*Operative Pharmacy and Pharmaceutical Preparations.*—Daily laboratory work and daily recitations, making *ten hours* of credit. First Semester. To be preceded by Course A in Analytical Chemistry, completed clear of conditions.—Professor STEVENS.

Classification of official preparations; laboratory study of pharmacopœial methods; recitations upon manufacturing procedures. The satisfactory production of about one hundred and fifty preparations required,

embracing the classes of the U. S. Pharmacopœia and National Formulary, galenicals, scales, and synthetic chemicals, from the simplest to the most difficult. Chemical proportions calculated into parts by weight and by volume, with practical adjustment of conditions carried out in the laboratory work of the student. Critical application of the pharmacopœial tests to commercial articles as well as to the preparations of the student. The daily laboratory exercise takes about four hours.

**COURSE C.**—*Pharmaceutical Technology and Prescription Practice.*—Four hours of credit. Second Semester. Lectures, and Work at the Prescription Stand, the time taken in the prescription exercises being dependant upon the previous experience and the ability of the student.—Professor STEVENS.

The technology of inorganic and organic articles used in pharmacy. Sources, manufacture, commercial history, prevalent impurities, standards of purity and strength, official tests, technical and public uses. The Art of Dispensing. *Fac simile* of prescriptions will be thrown upon the screen by the aid of a stereopticon and criticised as regards quantities, doses, errors, incompatibilities, and methods of compounding. Prescription writing, practice in the actual chirography of prescription files.

### PHARMACOGNOSY.

MICRO-BOTANY, PHARMACOGNOSY, PHARMACOLOGY (MATERIA MEDICA.)

**COURSE A.**—*Pharmacognosy* until Christmas.—Mr. WILLIAMS. Then *Organography* until the end of the semester.—Professor NEWCOMBE. Two hours of credit. First Semester. Practical Exercises.

In pharmacognosy, the dry acids and inorganic salts of the Pharmacopœia, in all their commercial and medicinal forms. A study for external acquaintance with the articles, by sight and other senses, each article being carried from hand to hand around the class during a lecture hour, with constant practical recitation.

In organography, class-work in the morphology and physiology of plants, with use of drawings, charts, herbarium specimens, and crude medicinal drugs.

**COURSE B.**—*Micro-botany.* Three hours of credit. Second Semester. Work in the botanical laboratory twice a week, two hours each time, and a lecture once a week.—Professor NEWCOMBE.

Structural botany and the delineation of cell-structure, and cell-contents, tissues and tissue systems. Minute histological study of typical crude drugs and their adulterants. The microscopical examination of powder-drugs, foods, and condiments, and the detection of adulterations. Reports upon commercial samples obtained in open market. Original investigation upon important crude drugs.

COURSE C.—*Pharmacognosy*.—Two hours of credit. First Semester. Practical exercises.—Mr. WILLIAMS.

For the ready recognition of the various articles of pharmaceutical commerce. A study by the methods stated for Course A.

COURSE D.—*Materia Medica*. Three hours a week. First semester. May be taken in the same semester as Course C. Recitations and lectures.—Mr. WILLIAMS.

Pharmacology, Posology, and Toxicology. The classification and history of medicines, their physiological action, their preparations and doses. The symptoms of poisoning and the use of antidotes.

COURSE E.—*Pharmacognosy*. Two times a week. Second Semester. Continuation of Course C.—Mr. WILLIAMS.

COURSE F.—*Materia Medica*. Three hours a week. Second Semester. May accompany Course E. Continuation of Course D.—Mr. WILLIAMS.

### GENERAL CHEMISTRY.

COURSE A. [Course 1.]—*Elementary Inorganic Chemistry*, Descriptive and Experimental. Three hours of credit (Advanced credit from high schools upon entrance examination.) First Semester.—Mr. HIGLEY.

COURSE B. [Course 4.]—*Inorganic Chemistry, Descriptive and Experimental*. Continuation of Course A. Four hours of credit. Second Semester. Lectures.—Professor FREER.

COURSE AA.—*Inorganic Chemistry, Descriptive and Experimental*. Five hours of credit, lectures and quizzes five times a week. First Semester.—Professor Freer, Jr.

A beginning course, extending further than Course A.

COURSE C.—*Physics*. Four hours of credit, lectures four times a week. Advanced credit from high schools upon entrance examination. Second Semester.—Mr. LICHTY.

### ANALYTICAL CHEMISTRY.

QUALITATIVE ANALYSIS, QUANTITATIVE ANALYSIS, TECHNICAL ANALYSIS.

COURSE A. [Course 1.]—*Qualitative Analysis*. Laboratory work and recitations, each five times a week, giving ten hours of credit. Either First or Second Semester. Should be preceded or accompanied by a course in General Chemistry.—Professor JOHNSON.

A prefatory drill upon the notation of metallic salts. Laboratory training in reactions of acids and bases, solubilities of salts, and means of separation. Synthetic operations. Chemical equations to be written on

demand. After completion of the foregoing, the course in actual analysis of unknown mixtures, solid and liquid. Mixtures presenting agents of oxidation and reduction; and the study of oxidation in the system of notation with positive and negative units of valence. The laboratory exercises take from three to four hours each.

COURSE B. [Course 4.]—*Quantitative Analysis*. Laboratory work five times a week, and lecture-recitations twice a week, giving *seven hours* of credit. Either First or Second Semester. Must be preceded by Course A., completed clear of conditions.—Professor CAMPBELL.

The determination of specific gravities; volumetric estimations; gravimetric determinations and separations. The results to come within specified limits of recovery. The laboratory exercises take from three to four hours, each.

COURSE C. [Course 2.]—*Advanced Qualitative Analysis*. Laboratory work three times a week, and recitations twice a week, giving *five hours* of credit. Second Semester. May follow Course A., of which it is a continuation.—Professor JOHNSON.

COURSE D. [Course 5.]—*Advanced Quantitative Analysis*. Laboratory work five times a week, a *five hour* course. Either First or Second Semester. Must be preceded by Course B.—Professor CAMPBELL.

COURSE E. [Course 6.]—*Iron and Steel Analysis*. Laboratory work, a *five hour* course. Either First or Second Semester. Open to those who have completed Course B. and received special permission.—

COURSE F.—*Water analysis*. Laboratory work three times a week and reading, a Course of *three hours* of credit. Either First or Second Semester. Must be preceded by Course B.—Professor PRESCOTT and Dr. GOMBERG.

Mineral water analysis, and the chemical methods of sanitary water analysis.

#### SHORTER COURSES IN QUALITATIVE CHEMISTRY FOR STUDENTS NOT CANDIDATES FOR A DEGREE.

(1). *Three Months' Course.—Qualitative Chemistry*. Laboratory work and recitations, each five times a week. Each laboratory exercise takes three or four hours, the recitation one hour, both in the time from one to six, P. M. *Begins October 1, January 7, March 30.*—Class sections instructed by a graduate assistant under charge of Professor JOHNSON.

The notation of salts; solubilities as concerned in the inorganic reactions studied group by group; chemical equations in precipitation, solution, and gas generation; studies of chemical change resulting in "*incompatibilities*." A limited number of "unknowns" in actual



analysis, not earlier than the last month of the course. The purpose of the course is an acquaintance with chemical change, rather than qualification as an analyst, the course being too brief for the latter.

(2). *Beginning Course of One Semester.* [Course 3.]—*First Steps in Qualitative Analysis.* Laboratory work three times a week, recitations twice a week. Second Semester:—Professor JOHNSON.—This course constitutes about one half of Course A. in Analytical Chemistry. It gives a little more analytical work than the three months' course.

### ORGANIC CHEMISTRY.

INCLUDING ANALYTICAL AND APPLIED ORGANIC CHEMISTRY.

COURSE A. [Course 10].—*Carbon Compounds.* Five hours of credit. First Semester. To be preceded by a course in General Chemistry, and one in Analytical Chemistry. Lectures.—Professor PRESCOTT.

A systematic study of organic compounds, their modes of synthetic production, the proofs of their structure, and their relationships. An introduction to the reference literature of organic chemistry. With each lecture there is a short colloquium upon the text-book, and a brief essay drawn from reference literature written and read by a member of the class.

COURSE B. [Course 11].—*Organic Preparations.* Two hours of credit. Either First or Second Semester. To accompany or follow Course A.—Laboratory work in Organic Synthesis, the exercises of three to four hours, each week.—Dr. GOMBERG.

Course B. may be taken in part, or extended, to make *one* hour or *three* hours of credit.

COURSE C. [Course 12.] *Organic Preparations and Ultimate Analysis.* Five hours of credit. Either First or Second Semester. May accompany or follow Course A.; either in addition to Course B. or instead of the latter. Laboratory work five times a week. A good command of the work of organic combustions can be obtained in this course.—Dr. GOMBERG and Professor PRESCOTT.

COURSES B. and C. may be continued, each for the same time and credit additional, and under the same teachers, in either semester, constituting respectively Course BB. [11 a.] and Course CC. [Course 13.]

COURSE D. [Course 14.]—*Organic Analysis, and Drug Assaying.* Five hours of credit. Second semester. To be preceded by Course A. and by a course in quantitative analysis (Course B. of Analytical Chemistry). Laboratory work with lectures.—Dr. GOMBERG.

Qualitative and quantitative analysis for alkaloids, and certain other representative carbon compounds, drug assaying, the outlines of fat analysis. With subcourses in technical organic analysis, adapted to the purposes of the student.

COURSE DD.—*Sanitary and Commercial Organic Analysis. Five hours of credit.* First or Second Semester. Continuation or alternative of Course D. Laboratory work and reading. May be devoted to Food Analysis or to some branch of commercial analysis, such as that of Nostriums on the Market, or that of Paint Materials.—Professor PRESCOTT and Dr. GOMBERG.

COURSE E.—*Toxicology.* Inorganic and Organic. Chemical and microscopical. *Three hours of credit.* Either First or Second Semester. Must be preceded by Course D. and the prerequisites of that course. Laboratory work and reading.—Professor PRESCOTT and Dr. GOMBERG.

#### BEGINNING COURSES IN ORGANIC CHEMISTRY IN SECOND SEMESTER.

Obtained only by permission. Given primarily for classes in other Departments of the University. Candidates for a degree begin the subject with Course A. and do not require these courses.

(1) *Lectures on Organic Chemistry* three times a week.—*Two hours of credit.*—Mr. TROWBRIDGE.

(2) *Lectures on Organic Chemistry* five times a week. [Course 28.]—*Four hours of credit.*—Professor PRESCOTT.

#### PHYSIOLOGICAL CHEMISTRY.

COURSE A.—*Analysis of Urine.* A course of *five hours* of credit, obtained in *three months.* Begins October 1, January 7, March 30. Must be preceded by a course in qualitative analysis, and one in organic chemistry. Laboratory work five times a week, and lectures three times a week,—all between 1 and 5 P. M.—Professor NOVY in the Faculty of Medicine and Surgery.

The chemistry of normal and abnormal urine, including the synthetic preparation of urea and the most important members of the uric acid group, and methods for the quantitative determination of urea, uric acid, phosphates, chlorides, sulphates, sugar and albumin.

COURSE B. [Course 7].—*Physiological Chemistry* including the Analysis of Urine. *Seven hours of credit.* Laboratory work daily and lectures three times a week, the course extending through the semester. Either First or Second Semester. Must be preceded by a course of qualitative analysis and a course in organic chemistry. And it is advisable that quantitative analysis should precede this course.—Professor NOVY.

COURSE C. [Course 2.]-*Bacteriology*. Five hours of credit. Laboratory work daily for three months. The course begins October 1, January 7, March 30.—Professor NOVY.

#### PHARMACOLOGY.

COURSE A.—*Pharmacological Laboratory*. Three hours of credit. Obtained only by permission. Laboratory work and reading. To be preceded by Course A. and course D. in organic Chemistry. It is of advantage to have had previous work in physiology.—Professor CUSHNY in the Faculty of Medicine.

COURSE B.—*Physiology*. Five hours of credit. First Semester. Obtained by permission. Lectures and recitations. Must be preceded by a course in organic chemistry. It is also desirable that the student have had studies in anatomy.—Professor LOMBARD.

#### MINERALOGY.

COURSE A.—*Crystallography*. Twelve lectures supplemented by practical exercises. In Second Semester beginning on a date to be announced.—Professor PETTEE.

COURSE B. [Course 1.]-*Mineralogy*. Five hours of credit. Includes Course A. Either First or Second Semester. To be preceded by a course in general chemistry. Lectures and practice.

COURSE C. [Course 2.]-*Mineralogy*. Five hours of credit. Includes Course B, as well as Course A. Second Semester. To be preceded by a course in general chemistry and a course in analytical chemistry. Lectures and practice.—Professor PETTEE.

#### PHYSICS.

*Physics* [Course 1.] Five hours. First Semester. Open to those who have had the B. S. entrance examination in physics, and to all others who have had sufficient preparation. A knowledge of plane trigonometry is indispensable. Mechanics, Sound and Light. Lectures.—Professor REED.

*Physics* [Course 2.]-Five hours. Second Semester. Must be preceded by [Course 1.] in Physics and by a course in general or analytical chemistry. Electricity, Magnetism, and Heat. Lectures.—Professor CARHART and Professor REED.

#### RESEARCH.

The work of students is conducted in research in the several branches of science and technology, by the professors in charge, governed by the provisions of the Faculty. A student, duly prepared by previous training, may

be admitted to any work of investigation for which he may be suited, by permission of the professor in charge of the work, subject to the regulations of the School. The period for research is limited, for undergraduates, to the final semester in the two years' course, and the senior year in the four years' course. Graduates of other colleges may enter at once upon research in this School. Holders of a Fellowship in this School must devote themselves wholly to research, and Graduate Students may do so if they desire. The research for a degree requires experimental work with the aim to obtain data not previously published. The indexing of chemical and pharmaceutical literature, in form for publication, is accepted as a necessary adjunct of research.

● COURSES IN RESEARCH, in either First or Second Semester, and under the provisions named above, are entitled to such *number of hours* of credit as shall be determined by the professor in charge of the work. In this determination the quality of the work is to be taken as a joint factor with the time it has employed.

#### FELLOWSHIPS.

I. THE STEARNS' FELLOWSHIP.—Established in 1895, and provided for two years, by means of a gift made for this purpose by Messrs. Frederick Stearns & Company, of Detroit. The income of the Fellowship is three hundred dollars a year. For 1895-6 and 1896-7 the research will be in organic chemistry and pharmacology. Appointments to the Fellowship will be made by the Faculty from graduates of the School who have the qualifications for the work, wholly in research.

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#### SUCCESSION OF STUDIES.

##### I. IN THE COURSE OF TWO YEARS.

*First Year, First Semester.*—General Chemistry AA.; Analytical Chemistry A. (Qualitative); Pharmacognosy A.

*First Year, Second Semester.*—Analytical Chemistry B. (Quantitative); Pharmacognosy B. (Micro-botany); Pharmacy A.; General Chemistry C. (Physics).

*Second Year, First Semester.*—Pharmacy B. (Laboratory and Lectures); Organic Chemistry A.; Pharmacognosy C., and D. (Materia Medica).

*Second Year, Second Semester.*—Organic Chemistry D. (Drug Assaying); Pharmacy C. (Technology and Prescription Practice); Pharmacognosy E., and F. (Materia Medica); Mineralogy A. (Crystallography); Research work.

The studies enumerated above are without exception required for the degree of Pharmaceutical Chemist. They constitute an amount of work which taxes the full working power of a student of average quickness and strength of scholarship. Students who desire a longer time for the same work may apply for it on entering college, or during the first semester, and obtain from the Faculty a distribution of all the work through *five semesters, or six semesters*, as found advisable in each case.

## II. IN THE COURSE OF FOUR YEARS.

The student is limited by rule to *sixteen hours* of credit (sixteen exercises per week) in each semester.

The student must present, at the beginning of each Semester, his election of studies for that semester, using a blank provided for that purpose. The elections of studies are subject to approval of the Faculty, who will take action upon them without delay, and all further adjustments of studies are to be completed as early as the second Monday of the semester. The studies prescribed for graduation are given on page 22. All the studies of the School are open to election.

### ADVISORY SEQUENCE OF STUDIES.

(For a student who enters with Latin and German, and with Chemistry, as high school studies. To be modified for those who enter with French as one of the languages, or without chemistry. See page 9.)

Required Studies are given in italics.

*First Year, First Semester.*—*Mathematics [Course 1 a] three hours. Physics [Course 1] five hours. German, a two hour course. Pharmacognosy Course A, two hours. English [Course 1 a] two hours.—Fourteen hours.* (If entering without German [Course A] in this study, *four hours.* If entering without Chemistry, *Course A, in this study, three hours.*)

*First Year, Second Semester.*—*Mathematics [Course 2 a] four hours. General Chemistry Course B, four hours. Pharmacognosy Course B. (Micro-botany) three hours. French [Course A], four hours.—Fifteen hours.* (Instead of French [A] *English [2 a]* and *German two hours* may be taken, or *Physics [2]* may be taken.)

*Second Year, First Semester.*—*Analytical Chemistry Course A (Qualitative) ten hours. Pharmacognosy Course C, two hours. French [Course B] two hours. A language course or other study, two hours.—Sixteen hours.*

*Second Year, Second Semester.*—*Analytical Chemistry Course B (Quantitative) seven hours. Pharmacy Course A, three hours. Pharmacognosy Course E, two hours. Mineralogy Course B, two hours. A language course of two hours.—Sixteen hours.*

*Third Year, First Semester.*—*Pharmacy Course B (Laboratory and Lectures) ten hours. Organic Chemistry Course A, A part of Course B to make six hours.—Sixteen hours.*

*Third Year, Second Semester.*—*Organic Chemistry Course D, five hours. Pharmacy Course C (Prescription practice and Technology) four hours. Of the following electives, not to exceed seven hours: Physiological Chemistry Course A (analysis of urine) five hours, or Course C (bacteriology) five hours. Organic Chemistry Course BB, two hours, or Course C five hours. Completion of the required language courses. Physics [Course 2] five hours.*

*Fourth Year, First Semester.*—*Pharmacognosy Course D (Materia Medica) three hours. Pharmacology Course A, three hours, Course B, five hours. Studies in research. Electives as above.*

*Fourth Year, Second Semester.*—*Pharmacognosy Course E (Materia Medica) three hours. Analytical Chemistry Course F (Water Analysis) three hours. Organic Chemistry Course DD (Food Analysis) five hours, or Course CC (Synthetic Manufactures) five hours. Research.*

### III. IN SELECTED STUDIES.

Students not expecting to graduate can enter for selected studies at the beginning of the First Semester, October 1, and at the beginning of the Second Semester,

February 17. Also for certain studies, on January 7, and on March 30.

For pharmaceutical purposes, the student who is limited to one year's college work, can do well in taking the regular studies of the First Year in the Course of Two Years as stated on pages 18 and 19.

Of the shorter courses usually most available for students having limited time in college, the following may be named:

The Three Months' Course in Qualitative Chemistry, Oct., Jan., March, (page 14).

Course A. in Pharmacy. Second Semester (page 11).

Course B. in Pharmacy. First Semester (page 11). Only by permission.

Course A. in Pharmacognosy. First Semester (page 12).

Course C. in Pharmacognosy. First Semester (page 13).

Course A. in General Chemistry. First Semester (page 13).

Course AA. in General Chemistry. First Semester (page 13).

Three hours' Course in Organic Chemistry. Second Semester (page 16).

Course [28] in Organic Chemistry. Second Semester (page 16).

First Steps in Qualitative Analysis. Second Semester (page 15).

All the work of the School is open to students not candidates for a degree, so far as they are prepared to engage in it.

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## EXAMINATIONS.

The examination upon each Course of instruction is held at the time the work of that Course is completed. The examinations, therefore, are held mostly at the end of the semesters, in February and in June.

The result of an examination is reported by the Professor in charge, for each student enrolled, to the Faculty, in terms as follow:

*Passed.*—Entitling the student to full credit for the Course.

*Conditioned.*—Imposing some specified condition, usually to take another examination, the condition to be fulfilled before credit can be given.

*Provisionally Passed.*—Withholding the credit for the Course until the student shall have done better work in other studies, in the judgment of the Faculty as a whole, who can change the record of Provisionally Passed to a record of Passed, or Conditioned, or not Passed, whenever such change shall be justified by the scholarship of the student in his several studies.

*Not Passed.*—Requiring the student to go over the regular exercises of the study again before he receives another examination.

*Absent.*—With statement of the cause of absence; if the student have left the class, stating at what time; or stating if absent without excuse or explanation.

## REQUIREMENTS FOR GRADUATION,

[Experience in the business of pharmacy is not made a requirement for a degree.]

### 1. *With the Degree of Pharmaceutical Chemist.*

[For requirements of college entrance, see page 5.]

#### FIRST YEAR, FIRST SEMESTER.

	Hours of Credit.*	Hours in Lect. & Rec.	Hours in Laboratory.
General Chemistry, Course AA., . . .	5	90	
Pharmacognosy, Course A., . . .	2	36	
Analytical Chem., Course A., <i>Qual.</i> , . . .	10	90	360
Total for First Semester, . . .	17	216	360

#### FIRST YEAR, SECOND SEMESTER.

General Chem., Course C., <i>Physics</i> , . . .	4	72	
Pharmacy, Course A., . . . . .	3	54	
Pharmacog., Course B., <i>Micro-botany</i> , . . .	3	18	72
Analytical Chem., Course B., <i>Quant.</i> , . . .	7	36	360
Total for Second Semester, . . .	17	180	432

\* "Hours of Credit" are the number of exercises *per week* for one semester. See page 10.



## SECOND YEAR, FIRST SEMESTER.

Pharmacy, Course B., <i>Preparations</i> , . . .	10	90	360
Organic Chemistry, Course A., . . .	5	90	
Pharmacognosy, Course C., . . .	2	36	
Pharmacog., Course D., <i>Materia Med.</i> , . . .	3	54	
		<hr/>	<hr/>
Total for First Semester, . . .	20	270	360

## SECOND YEAR, SECOND SEMESTER.

Pharmacog., Course F., <i>Materia Med.</i> , . . .	2	36	
Organic Chem., Course D., <i>Analysis</i> , . . .	5	54	180
Pharmacognosy, Course E., . . .	2	36	
Mineralogy, Course A., <i>Crystallography</i> , . . .		6	12
Pharmacy, Course C., <i>with Prescription Practice</i> , . . .	4	72	
Investigations, average, . . .	5		180
		<hr/>	<hr/>
Total for Second Semester, . . .	18	204	372
Totals of required work, . . .	72	870	1524
		<hr/>	<hr/>
Hours in laboratories and lectures, . . .		2,394	

2. *With the Degree of Bachelor of Science in Pharmacy.*

[For requirements of college entrance, see page 8.]

[For the advisory sequence of studies, see page 19.]

*Required Studies.*—In English,—[Courses 1a and 2a],—*four* hours of credit.In German,—(a) for those who entered *without* German, *eight* hours of credit; or (b) for those who entered *with* German, *four* hours.In French,—(a) for those who entered *without* French, *eight* hours of credit; for those who entered *with* French, *four* hours.In Mathematics,—[Courses 1a and 2a],—*seven* hours of creditIn Physics,—[Course 1],—*five* hours of credit.In General Chemistry,—(a) for those who enter *without* Chemistry, Courses A and B,—*seven* hours; or (b) for those *with* Chemistry, Course B, *four* hours.In Mineralogy,—Course C, *two* hours of credit.In Organic Chemistry,—Course C, *five* hours in addition to Courses A and D.

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All the studies *required for graduation as Pharmaceutical Chemist*, except Courses AA and C in General Chemistry, and Course A in Mineralogy, and amounting to *sixty-three* hours of credit.

*Elective Studies.*—

From these *as* offered in the School, and in the University, the student must choose, with the approval of the Faculty, and complete enough including those above prescribed to make in all *one hundred and twenty* hours of credit.

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## THE LIBRARY, BOOKS OF REFERENCE, AND TEXT-BOOKS.

The School provides an extensive library, the main portion of which is shelved and indexed in the General Library Building of the University. The entrance to the Library is within one hundred feet of the entrance to the main building of the School of Pharmacy. The Library is open to readers twelve and one-half hours daily except Sundays and legal holidays during the collegiate year, and six hours daily during the three months of the summer vacation.

The Library provides the complete sets of the journals, the original repositories of the sciences related to pharmacy, as well as the current periodicals of the profession, encyclopædias and hand-books of chemistry and pharmacy, and the latest works of value in study. The works of reference in use in the School may be estimated at near four thousand volumes. The medical library in the same building, numbers 5,774 volumes, besides unbound pamphlets. In all the general library contains 74,355 volumes and 15,242 unbound pamphlets.

A working Library is also provided, in a reading alcove of the Chemical Building, with several hundred works of immediate reference, duplicates of those in the General Library. These works are in constant use by students for reference reading upon their laboratory work, and in preparing for their recitations.

The files of current numbers of the journals of pharmacy of the United States are provided in the Museum of the School, accessible to all students.

The Class Text-books of the School, those which the student should obtain for himself, can be obtained in the book-stores in this University town at rates lower than those customary in the general trade of the large cities. These text-books include the following: In General Chemistry, Freer. In Qualitative Analysis, Prescott and Johnson. In Pharmacy, the U. S. Pharmacopœia, and Coblentz. In Botany, Bastin. In Pharmacognosy, Flückiger. In Materia Medica, Sayre. In Organic Chemistry, Bernthsen. In Organic Analysis, Prescott.

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### THE MUSEUM.

This comprises collections in educational chemistry, the chemical industries, pharmacy, and pharmacognosy. It occupies a floor space of 2,500 square feet in the chemical building, and is provided with permanent cases.

The principles of chemical science are illustrated by groups of synthetic products, as progressive formations, and by related compounds, both natural and artificial.

The chemical industries are represented by collections of the materials and the successive products of manufacture, and the resources and methods of industrial art. The outlines of chemical technology are presented with models and plans, giving object lessons in the modern production of alkalies and acids, dyes and pigments, soaps, distillates, etc.

In pharmacognosy, the collection of medicinal plants is extensive and well chosen for instruction both in botany and in commercial history. This collection is being rapidly enriched from all parts of the world. It is used in connection with the series of working samples in daily use in the classes. The crude drugs are displayed in compar-

ison with their active constituents, each in its proportional quantity.

Pharmacy is exemplified in the preparations of the pharmacopœia, the national formulary, and the appliances of skillful manipulation.

Of all these collections a good share originates in the work of students engaged in special lines of study and research.

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### FEES AND EXPENSES.

THE MATRICULATION FEE is \$10 for residents of Michigan, and \$25 for others. It is paid but once and gives privileges of permanent membership in any Department of the University.

The ANNUAL FEE is \$30 for residents of Michigan, and \$40 for others. It is paid the first year, and each year thereafter.

In the Chemical Laboratory the student pays by account for the chemicals and apparatus which he uses. The expense varies with prudence and economy, the average amount being about one dollar and twenty cents per week. Advance payment is required from time to time; the first deposit being twenty dollars.

At graduation there is a diploma fee of \$10.

Students obtain board and lodging in private families for from three to five dollars a week. Clubs are also formed, in which the cost of board is from one dollar and a half to two dollars and a half a week. Room rent varies from seventy-five cents to two dollars a week for each student. Students arriving in Ann Arbor can obtain information in regard to rooms and board by calling at the Steward's office.

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### CORRESPONDENCE.

Letters of inquiry may be addressed to Professor A. B. Stevens, Secretary, or to the Dean of the School of Pharmacy, Ann Arbor, Mich.

# Students in 1894-95.

NAME.	RESIDENCE.
Ursa S. Abbott,	<i>Clear Port, O.</i>
James Willard Ames,	<i>Williamsburg, Ky.</i>
Clarence Henry Baum,	<i>Danville, Ill.</i>
Adam John Baumhardt, Ph.C., <i>in Dept. Medicine and Surgery.</i>	<i>Hutchinson, Kan.</i>
Henry John Bowerfind,	<i>Adrian.</i>
Claude Melnotte Bunn,	<i>Three Rivers.</i>
Arthur Fremont Calerdine,	<i>Cincinnati, O.</i>
Frank Harlow Camburn,	<i>Blissfield.</i>
Milo Cornwall,	<i>Denver, Col.</i>
Ernest Lee Curtis,	<i>Ann Arbor.</i>
Cornelius De Jonge,	<i>Zeeland.</i>
John Wesley Derry,	<i>Baltimore, Md.</i>
Oscar Conrad Diehl, Ph.G., <i>Buffalo Coll. of Pharmacy,</i>	<i>Buffalo, N. Y.</i>
Oscar Charles Dilly, Ph.G., <i>Louisville Coll. of Pharmacy,</i>	<i>Louisville, Ky.</i>
George Doehne, Jr.,	<i>New Ulm, Minn.</i>
Gilbert Allen Doty,	<i>Ann Arbor.</i>
Charles Francis Drake,	<i>Chicago, Ill.</i>
Joseph Max Drew,	<i>Otsego.</i>
Hubert Oscar Gerding,	<i>Glendorf, O.</i>
Edward Proctor Graves,	<i>Kansas City, Mo.</i>
Nelson Alonzo Hall,	<i>Sault Ste. Marie,</i>
Henry Oscar Hanna,	<i>Lincoln, Neb.</i>
John Hartz,	<i>College Point, N. Y.</i>
George Millard Heath,	<i>Ann Arbor.</i>
Mary Katharine Heard, Ph.C., <i>in Dept. L. S. A.,</i>	<i>North East, Pa.</i>
Henry Albert Herzer,	<i>Ann Arbor.</i>
Frank Carleton Hitchcock,	<i>Plainwell.</i>
Charles Ralph Horton,	<i>Northville.</i>
Charles Morton Hosmer,	<i>Maryville, Mo.</i>
William Henry Housum,	<i>Decatur, Ill.</i>

Theodore A. Jamison,	<i>South Boardman.</i>
Charles Willis Johnson,	<i>Saint Joe Station, Ind.</i>
Carl Wallace Jones,	<i>Plainwell.</i>
John Judy,	<i>Moorefield, W. Va.</i>
Harold Elmer Katzenmeyer,	<i>North Baltimore, O.</i>
Fred William Keller,	<i>Paso Robles, Cal.</i>
Edwin Howard Kelley,	<i>Cadillac.</i>
Edgar Livingstone Knapp,	<i>Saginaw, East Side.</i>
James W. T. Knox,	<i>Alvarado, Tex.</i>
Hiram Louis LaBar,	<i>Fife Lake.</i>
George Lohrstorfer,	<i>Port Huron.</i>
John William Lutes,	<i>Richmond.</i>
Elgin Mallett,	<i>Trenton, Mo.</i>
Fay Melville Marsh,	<i>Lyons.</i>
Grace Ellen McNoah, Ph.C., B.L., <i>in Dept.</i>	<i>Ann Arbor.</i>
<i>L. S. A.,</i>	<i>Spring Lake.</i>
Garry Windsor Messinger,	
Emerson Romeo Milier, Ph.C. 1892, Phar.	
M. 1893, B.S. 1894, <i>in Dept. L. S. A.,</i>	<i>Ann Arbor.</i>
Thomas Jonathan Milner, Ph.C.,	<i>Big Rapids.</i>
Adolph George Mogk,	<i>Ann Arbor.</i>
Benjamin Lindley Murray, Ph.C., <i>in Dept.</i>	
<i>L. S. A.,</i>	<i>Ypsilanti.</i>
Robert J. Nisbit,	<i>Colehour, Ill.</i>
Edwin James Fuller Ostrander,	<i>London.</i>
Henry Palmer, Ph.C., M.D., <i>in Dept.</i>	
<i>Medicine and Surgery,</i>	<i>St. Johns.</i>
Walter Asbury Parker,	<i>Beardstown, Ill.</i>
Ernest Gray Reese,	<i>Bowling Green, O.</i>
V. Carl Richardson,	<i>Carson City.</i>
Harry David Rumps,	<i>Battle Creek.</i>
Isidore Sanders,	<i>Trinidad, Col.</i>
Edward Louis Schmitt,	<i>Rochester N. Y.</i>
Wilbur Benson Scott,	<i>Peoria, Ill.</i>
Walter Scotten,	<i>Detroit.</i>
Harry Theophilus Smith,	<i>Phoenixville, Pa.</i>
Charles Henry Steincamp,	<i>Toledo, O.</i>
Richard John Stephany,	<i>Rochester, N. Y.</i>
George Charles Stevenson, Ph.C., <i>in Dept.</i>	
<i>L. S. A.,</i>	<i>Youngstown, O.</i>
John George Stromier,	<i>Glasgow, Scotland.</i>
Burton Allen Sweet,	<i>Carson City.</i>
Roland Bert Taber,	<i>Benton Harbor.</i>

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Henry Wright Taylor, B.S., <i>Earlham Coll.</i> , <i>Richmond, Ind.</i>	
Miles Lucius Trowbridge,	<i>Syracuse, N. Y.</i>
Milton Lyman Trowbridge,	<i>Syracuse, N. Y.</i>
Wilber John Teeters, B.S., <i>Mount Union Coll.</i>	<i>Alliance, O.</i>
Fred von Walthausen,	<i>Bay City.</i>
Edward Eugene Washburn,	<i>New London, O.</i>
John Lewis Washburn,	<i>Perry, N. Y.</i>
Horace Houghton Waters,	<i>Monroe.</i>
Charles Franklin Watkins,	<i>Traverse City.</i>
Clarence Albert Weaver,	<i>Utica, N. Y.</i>
George Purdy Wilder,	<i>Albion.</i>
Charles Henry Williams, Ph.B., <i>Adrian Coll.</i> , Ph.C., <i>in Dept. Medicine and Surgery</i> , <i>Adrian.</i>	
Elisha Bird Williams,	<i>Ann Arbor.</i>
Frank Howard Wilson,	<i>Virginia, Ill.</i>
William Wilson, Jr.,	<i>Amsterdam, N. Y.</i>
Edward Chancey Worden,	<i>Ypsilanti.</i>
Frank Yott, Jr.,	<i>Midland.</i>
Joseph Franklin Zwilling,	<i>Waterloo, Ind.</i>

## Register of Alumni.

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The Chemical Laboratory of the University opened to students in 1856. A course in operative pharmacy was added to the laboratory curriculum in 1860, and was held open to those who had completed at least one of the chemical courses. From the first the laboratory was provided for the use of students of all Departments of the University, so far as chemical studies enter into the curriculum of each, and this provision in common for all the departments has continued to the present. From 1860 to 1868 Certificates of Proficiency were granted to students of any department who had completed with credit one or more of the laboratory courses of experimental study and had passed the chemical examinations. Of those who received the certificates some have followed chemistry as a profession, and their names so far as known are given with residence and occupation in the Alumni Register of Practicing Chemists of the University.

The laboratory course in operative pharmacy had been taken by students of the Department of Medicine, students of the Department of Literature and Science, and by special chemical students, for eight years, and to the number of one hundred and twenty-one persons, before the organization of a Department of Pharmacy. Of these early students of chemistry and pharmacy a directory of residence and occupation cannot now be given.

The School of Pharmacy was organized in 1868, at first as a polytechnic division of the Department of Literature, Science and the Arts. The charter of the School,



and its power as a college of pharmacy to confer degrees, rest upon (1) the acts of the Regents of the University in 1868 and 1876, sustained by (2) the laws of the State in 1851, and (3) the Constitution of Michigan, in accord with the act of Congress providing for the admission of the State. The degree of Pharmaceutical Chemist, with the diploma of graduation in pharmacy, was first conferred in 1869.

The following Register contains the names of all graduates in pharmacy at the University, 1869 to 1895, and does not include any others. The collegiate honors named in the Register are those held in addition to the degree of Pharmaceutical Chemist (Ph.C.).

In this Register a proprietor in pharmacy is designated as a "pharmacist" only; a joint-proprietor as a "pharmacist in the company of" the house designated; and one employed in pharmacy is recorded as "with" the proprietor named.

It is desired that errors or deficiencies in the Register, especially such as concern residence and occupation, shall be immediately reported with information to the Secretary of the Department. The kind services of Alumni are solicited in the endeavor to keep the registration as complete as possible. A mark of interrogation (?) following any name is given as a request for the postoffice address.

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## OTHER CATALOGUES OF GRADUATES AND STUDENTS.

A Catalogue of Chemists, revised from time to time, is furnished to applicants. It is a professional catalogue of practicing chemists and teachers in chemistry who have been educated at this University. The "General Catalogue of Officers and Students of the University," 1837 to 1890, 472 pages, price \$1.75 in cloth, can be obtained by address-

ing the Steward of the University. Besides the names of the Graduates, it contains the names of Non-Graduate Students in the School of Pharmacy, to the number of 277, with the records of their residence and occupation so far as obtained.

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## GRADUATES WITH THE DEGREE OF PHARMACEUTICAL CHEMIST.

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College degrees held in addition to that of Ph.C. are given, with the year when they were conferred, after the names of graduates who have received them.

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### 1869.

- \*ARNOLD, CHRISTOPHER FREDERICK.—M. D. Detroit Medical College, 1868. Physician and Pharmacist, Port Madison, Washington Territory until 1871. Died in San Diego, California, in 1872.
- BLISS, HALE.—Instructor in Woman's Med. College, N. W. Univ. Represents Billings, Clapp & Co., Boston, Mass. Address, 571 Flournoy st., Chicago, Ill.
- BLOOMFIELD, EDMUND M.—M. D. Univ. Mich. 1869. Member Am. Med. Ass.; Ind. State Med. Ass. Physician and Surgeon at Peru, Ind.
- BOISE, EUGENE P.—B. A. Oberlin, 1867; M. D. Univ. Mich. 1869. Physician, Grand Rapids, Mich.
- CASE, MARVIN T.—M. D. Univ. Mich. 1870. Assistant in analytical chemistry, Univ. Mich., 1869-70. Physician, Attica, Ind.
- \*COVERT, SAMUEL.—M. D. Univ. Mich. 1870. Died at London, Ontario, June 5, 1870.
- CUSHMAN, HENRY DEP.—Dispensing pharmacist and wholesale dealer in essential oils of Michigan production, Three Rivers, St. Joseph Co., Mich. Member of the state pharmaceutical association.
- FORD, JAMES M.—M. D. Univ. Mich. 1869. Pharmacist in the firm of Ford & Arnold, Kansas City, Mo.
- FOX, ASA L.—M. D. Univ. Mich. 1870. Engaged in pharmacy until 1883. Physician, Bloomington, Ill.
- GEORGE, EDWIN L.—Lumber Dealer, Montclair, N. J.
- HENNING, EDGAR L.—Banker, Plano, Ill.

- HOLLAN, LEGRAND H.—M. D. Univ. Mich. 1869. For some years a pharmacist in the firm of Hawkins & Hollan, Glasgow, Mo. Now at Herkimer, N. Y.
- \*HOOD, CHARLES HERBERT.—Pharmacist. Died Feb. 22, 1873, at Holly, Mich.
- JARVIS, JOHN W.—M. D. Univ. Mich. 1869. Formerly at Erie, Pa. Waterford, Pa.
- MALTBIE, WILLIAM F.—M. D. Univ. Mich. 1869. Physician, Xenia Ind. (?)
- MOORE, LUMAN G.—M. D. Long Island College Hospital, 1873. Physician and pharmacist, Kinsman, Ohio.
- NEAL, JAMES C.—M. D. Univ. Mich. 1869. Entomologist and Botanist, Florida Experiment Station; professor of Entomology in Fla. State Agr. Col., Lake City, Florida.
- OAKS, JOHN F.—M. D. College of Physicians and Surgeons, New York, 1871. Physician, Morris, Ill. Consulting surgeon to St. Joseph's Hospital, Joliet, Ill. Oculist and Aurist to the Englewood Union Hospital. Address, 705 Venetian Bldg., Chicago, Ill.
- REX, ROBERT G.—M. D. Univ. Mich. 1871. Assistant in analytical chemistry, Univ. Mich., 1870-71; resident at Univ. Berlin, 1871-3. Some time professor of chemistry in Willamette University, Oregon. (?)
- \*ROUSE, WILLIAM H.—M. D. Univ. Mich. 1869. Physician, 439 Sixth st., Detroit, Mich. Died May 27, 1889, at Detroit, Mich.
- \*RUTAN, JOHN ALLEN.—M. D. Univ. Mich. 1870. Died in 1871.
- SADLER ALPHONSO.—For some time a pharmacist, since a dealer in books, Marshalltown, Iowa. Now in real estate business at 437 O'Farrell st., San Francisco, Cal.
- STANTON, EUGENE M.—Engaged in pharmacy until 1879. Some time a teacher, Oronoco, Olmstead Co., Minn. Palmer, Wash.

## 1870.

- \*BOEHME, CHARLES AUGUSTUS.—Pharmacist. Later chemist with William S. Merrill & Co., wholesale drug dealers, Cincinnati, Ohio. Died December, 1874.
- BUCHANAN, WILLIAM A.—M. D. Miami Med. College, 1875. Pharmacist until 1874. Physician, Paris, Ill.
- CARY, JOHN C. W.—Commercial pharmacist, with Harle, Haas & Co., Council Bluffs, Iowa. Address, Atlantic, Cass Co., Iowa. Member Iowa State Phar. Assoc.
- CASE, THEODORE G.—Lawyer, 338 Warren ave., Chicago, Ill.
- \*CURTIS, ALBERT CYRUS.—Ph. G. Philadelphia Coll. Phar. 1872. Was a pharmacist at Ashland, Ohio. Died June 1876, in Wyoming Territory.

- EWING, FRANK.—M. D. Univ. Mich. 1870. Physician, in practice until 1894. Director of Ohio National Bank, Lima, Ohio. Also in firm of Fergusson, Ewing & Co. Address, West Cairo, Ohio.
- FORD, CHARLES E.—Sometime a pharmacist at Peoria, Ill. M. D. Ruth Medical College, Cincinnati, Ohio, 1885. Physician, 20 Clinton st., Cincinnati, O.
- GOWER, ARTHUR C.—Pharmacist for some years in Ann Arbor, Farmer, Chippewa Falls, Wis.
- GUY, OMAR G.—Ph. G. Philadelphia College of Pharmacy, 1870. Pharmacist. Seattle, Washington.
- \*HAGLE, PETER N.—M. D. Univ. Mich. 1869. For some time a principal of city schools. Died at New Haven, Mich., August 19, 1889.
- \*HATCH, HORACE F. M. D. Syracuse Univ. 1873. Physician. Died September 2nd, 1875, at Syracuse, N. Y.
- HIGGINS, GEORGE E.—Pharmacist. Now with Anthony Kelly & Co., wholesale grocers, Minneapolis, Minn.
- HOWELL, CORNELIUS C.—For some time a pharmacist in Aurora, Ill., and then a wholesale druggist in St. Louis, Mo. After 1876 engaged in mining engineering in Colorado. (?)
- JEWETT, HENRY S.—B. A. Univ. Mich. 1868; M. D. Univ. Mich. 1870. Assistant in analytical chemistry, Univ. Mich. 1868-70; Resident in Berlin and Vienna, 1872-4. Donor of the "Adams-Jewett botanical collection" of the University. Physician, 21 Ludlow st., Dayton, Ohio. Surgeon of St. Elizabeth Hospital.
- JONES, JOHN R.—M. D. Univ. Mich. 1872. Assistant in Chemical Laboratory, 1871-72. Physician and pharmacist, 2299 Gratiot ave., Detroit, Mich.
- LOHMAN, GEORGE H.—Pharmacist in the firm of G. H. Lohman & Co., Kendallville, Ind. Member Am. Phar. Assoc. and of Ind. State Phar. Assoc.
- \*MACKIMMIE, WILLIAM —Pharmacist in the firm of G. & W. MacKimmie, 29 Jefferson ave., Detroit, Mich. Died October 16, 1894.
- \*MERELL, OTIS A.—Until 1881 a pharmacist at 453 Grand River ave., Detroit. Died at Owosso, October 18, 1894.
- \*MILLS, CHARLES W.—Pharmacist in the firm of Mills, Lacy & Dickinson, Grand Rapids, Mich. Secretary of the Honduras Fruit Company. Died May, 1892, at Tella, Honduras, Central America.
- MOSS, JOHN R.—Pharmacist in the firm of Moss & Potts, Rocheport, Mo.
- NEWMAN, ISAAC N.—Pharmacist with Browns Pharmacy Co., 110 Woodward ave., Detroit, Mich.

- \*NEWTON, WILLIAM E.—For some time a pharmacist in charge for William Blake, Tioga Center, N. Y. Died February 24, 1886, at Tioga Center.
- ROE, JOHN O.—M. D. Univ. Mich. 1870. In Rochester, N. Y.
- ROMIG, SAMUEL V.—M. D. Univ. Mich. 1872. Physician. Now at Roger's Park, Ill.
- STEVENS, MERARI B.—M. D. Univ. Mich. 1869, and Bellevue, 1876. Physician, Defiance, Ohio.
- TAYLOR, WALLACE.—A. B. Oberlin, 1867; M. D. Univ. Mich. 1870; M. A. Oberlin, 1873. Physician in the missionary service, Osaka, Japan.
- WEEKS, EUGENE J.—Ph. G. New York, 1866. Pharmacist in the firm of E. J. Weeks & Co., Jackson, Mich.
- WOLCOTT, WILLIAM A.—Pharmacist in the firm of Wolcott & Co., Batavia, Ill.

## 1871.

- ADAMS, ALFRED W.—M. D. Univ. Mich. 1871. Physician, Bellevue, Mich.
- AMERMAN, ALBERT S.—M. D. Univ. Mich. 1871. Physician and chemist, Rockford, Pennington Co., S. Dakota.
- BRADDOCK, OSCAR L.—Pharmacist, in the firm of F. J. Rigg & Co., Pasadena, Cal.
- \*CAREY, WINFIELD S.—Pharmacist, The Whitaker Drug House, Phoenixville, Pa. Died April 16, 1893.
- CRAMPTON, CHARLES B.—Pharmacist, in the company of Crampton & Litchfield, Flint, Mich.
- FITCH, HENRY A.—M. D. Univ. Mich. 1878. Pharmacist and physician, Utica, N. Y.
- \*FLICK, OTIS C.—M. D. Univ. Mich. 1872. Physician, Brooklyn, N. Y. Died February 22, 1890, at Cheshire, Mass.
- \*GENTSCH, GEORGE THEODORE.—M. D. Univ. Wooster, 1878. Pharmacist in New Philadelphia, Ohio, afterward in Chicago, Ill. From 1876 to 1879 professor of chemistry and toxicology in Med. Dept. Wooster Univ. Died March 4, 1880.
- GRAHAM, JOHN B.—For some time a pharmacist. Address, 148 Charles st., Allegheny, Pa.
- JOHNSON, OTIS C.—B. A. Oberlin, 1868; M. A. 1877. Professor of Applied Chemistry in the University of Michigan. Member of Convention of Revision of U. S. Ph., 1890.
- KELLY, MARTIN C.—M. D. Univ. Mich. 1875. Physician, Mount Clemens, Mich.
- MINER, MAURICE A.—Assistant Professor of pharmacy, School of Pharmacy, Northwestern University, 2421 Dearborn st., Chicago, Ill. Member Am. Phar. Association.

- MASSEY, SOLON F.—Graduate of West Point U. S. Military Academy, 1877; of U. S. Artillery School, Fortress Monroe, 1886. First Lieut. 5th Regt. U. S. Artillery. In 1881-2, acting assistant professor of mathematics at West Point Academy. Fort Schuyler, N. Y.
- MERELL, ASHER F.—Formerly in firm of Merell & Ryan, St. Paul, Minn. Now in real estate at 125 La Salle st., Chicago, Ill.
- MOORE, SAMUEL S.—For sometime in the Railway Mail Service. Now in real estate, 676 Wealthy ave, Grand Rapids, Mich.
- PHILLIPS, DANIEL A.—Pharmacist, Fairmount, Neb.
- POWELL, JEHU Z.—M. D. Univ. Mich. 1874. Physician, Logansport, Ind. Assistant in analytical chemistry Univ. Mich., 1874-5.
- STYLES, MILTON D.—B. S. Mansfield Normal School, 1869; M. D. Univ. Mich. 1872. Engaged in pharmacy until 1875. Traveling salesman for Fish & Holmes, Elmira, New York.
- \*UPJOHN, AMELIA.—MRS CAMPBELL.—Died February, 1876.
- UPJOHN, MARY.—MRS. SIDMAN.—Hastings, Barry Co., Mich.
- \*WILSON, WILLIAM MAYNARD.—For some years engaged in pharmacy in St. Louis, Mo. Died February 9, 1877.

## 1872.

- BOUGHTON, ENOS G.—Manufacturing chemist for flavors and perfumes. Pittsford, Monroe Co., N. Y.
- BURNETT, CLINTON J.—Until 1883 in the firm of C. J. Burnett & Co., pharmacists, Lapeer, Mich. General Agent of the Capital Investment Building and Loan Association of Lansing, Mich. Address, 720 Ionia st., Lansing, Mich.
- COLLINS, CLAYTON F.—Pharmacist, Homer, Mich.
- \*PRENTICE, FRED. F.—Pharmacist, firm of Prentice & Evenson, Janesville, Wis. President Wis. State Phar. Assoc. 1885-6; member Am. Phar. Assoc. Died at Long Beach, Cal., May 18, 1894.
- REPPERT, FERDINAND.—Pharmacist, Muscatine, Ia.

## 1873.

- \*BODEMANN, FRANK ELLIS.—M. D. Univ. Mich. 1874; M. A. Univ. Notre Dame, 1879. Surgeon in the Servian Army in 1876-7. Studied medicine in London and Vienna in 1875-6. Died, 1884, in Detroit, Mich.
- BOYD, JAMES P.—M. D. Long Island College Hospital, 1875. Member of Ohio State Medical Society. Physician, 143 S. Summit St., Akron, Ohio.
- BROWN, JOHN G.—A. B. Albion College, 1871. Pharmacist from 1875-92. Retired, Albion, Mich.

- COOK, GEORGE S.—Manufacturing pharmacist, for some years with Farrand & Williams, Detroit. Pharmacist and Secretary in the firm of the A. P. Cook Co. Limited, Brooklyn, Jackson Co., Mich.
- HALE, AUSTIN K.—M. D. Univ. Mich. 1874. For some years a pharmacist in Ann Arbor. Physician, Adams, N. Y.
- \*McCARTHY, RUFUS H.—B. A. Notre Dame, 1871; M. D. Univ. Mich. 1874. Physician, Washington, D. C.
- RICE, J. SCOTT.—Wholesale produce dealer and shipper, Sidney, Ohio.
- STEPHENSON, AUGUSTUS C. Formerly pharmacist, 317 E. 5th st., Des Moines, Ia. Address, 1222 Capital ave., Des Moines, Ia.
- WILBUR, THEODORE S.—Pharmacist, 2616 Olive st., St. Louis, Mo.

## 1874.

- COTTON, ROBERT M.—M. D. Univ. Mich. 1875. Assistant in analytical chemistry, Univ. Mich. in 1874-5. President of State Association, 1892-93. Pharmacist, Tyndall, Bon Homme Co., S. Dakota. Charter member of S. Dakota Pharmaceutical Association.
- CRANE, KATE.—MRS. KATE C. JOHNSON.—Accountant and dispensing clerk in the chemical laboratory of the University of Michigan until 1888. Ann Arbor, Mich.
- \*DAVIS, LORENZO M.—Pharmacist, some time at Prospect House, Cleveland, Ohio. Member of the Cleveland Microscopical Society. In 1873-4 assistant in analytical chemistry, Univ. Mich. In 1876-7, Public Analyst in Ohio. Died October 29, 1892, at Colorado Springs, Col.
- DOUGLAS, SAMUEL T.—Ph. B, Univ. Mich. 1873. Assistant in quantitative analysis, Univ. Mich., 1874-5 to 1876-7, inclusive. Attorney in the company of Bowen, Douglas & Whiting, 80 Moffat Building, Detroit, Mich.
- DUNCAN, CHARLES G.—M. D. Univ. Maryland, 1881. Until 1878 engaged in pharmacy in Toledo, Ohio. Physician, Socorro, New Mexico.
- EASTWOOD, JOHN F.—Univ. Mich. B. A. 1871; M. A. 1873; Ph. D. 1887. From 1874 to 1885 professor of natural sciences in Bethany College, W. Va. In the chemical teaching corps of the University, 1886 to 1888. Professor of Chemistry and Physics, Georgetown College, Georgetown, Ky.
- EHRHARDT, HENRY.—Pharmacist for some years in St. Louis, Mo. Physician, 1418 Washington st., St. Louis, Mo.
- FRITTS, FRANK F.—Manufacturing pharmacist at the works of Parke, Davis & Co., Detroit, Mich.
- HARVEY, GEORGE,—B. S. Iowa Agricultural College, 1873; M. D. Univ. Mich. 1875. Physician, Valley City, N. Dakota.

- HENRY, GEORGE C.—Charter member of Iowa State Phar. Assoc. Pharmacist and capitalist, 400 Jefferson st., Burlington, Iowa.
- HUDSON, CHARLES H.—Pharmacist, Marcellus, Mich.
- HUNTINGTON, HENRY N.—Pharmacist, Plumer's Block, Franklin, Pa.
- HUNTSMAN, ALBERT.—Pharmacist, Hebron, Neb.
- JONES, GERTRUDE.—MRS. GERTRUDE J. CUSCADEN.—M. D. Univ. Mich. 1874. Physician, 1715 Dodge st., Omaha, Neb.
- \*KUHLMAN, ELI.—In the firm of Kuhlman & Co., pharmacists, Garrett, Ind., until 1880; afterward in New Ulm, Minn. Died November 24, 1883, in Canton, O.
- PUGH, FINLEY B.—Pharmacist in the firm of Pugh & Cox, Rushville, Ind., until recently. Freight-Traffic Manager, Parey Mfg. Co., 1004 Alabama st., Indianapolis, Ind.
- SCHRAGE, WILLIAM. — Pharmacist until 1886. Superintendent Phoenix Chair Co., Sheboygan, Wis.
- SENIER, ALFRED.—M. D. Univ. Mich. 1874; Ph. D. Berlin, 1887. F. C. S. London, 1875; F. I. C. London, 1878. Demonstrator of chemistry in the laboratories of the Pharmaceutical Society of Great Britain, 1876-81. Lecturer on chemistry in St. John's College, London, 1881-4. Student in research with Professor Hoffmann, in Berlin, 1884-7. Professor of Chemistry in Queen's College, Galway, Ireland.
- \*SHEPARD, OSCAR ELIJAH.—A charter member of the Ind. State Phar. Assoc. Pharmacist for some years in firm of Shepard & Byers, Kokomo, Ind. Died July 17, 1884, at Mendon, Mich.
- WEAVER, JONATHAN.—General Manager and pharmacist in the firm of J. C. Weaver & Bro., wholesale and retail druggists, Greenville, Ohio.

### 1875.

- \*BAUM, CHARLES M.—A pharmacist formerly at Holland, Mich., afterward in San Diego, Cal. Died in San Diego, January 5, 1890.
- BURT, JOHN C.—Registered in Illinois as "Graduate in Pharmacy." Business manager and purchasing agent (formerly pharmacist) of the Illinois Eastern Hospital for the Insane, Kankakee, Ill.
- COAD, NICHOLAS G. O.—M. D. Univ. Vt. 1887.—Physician, pharmacist and Mayor of Hull, Iowa.
- DICKINSON, OTIS B.—For sometime pharmacist at Grand Haven, Mich. Now representative, John Wyeth and Bro. for Mo., Kans. and Ind. Ter. Address, Centropolis Hotel, Kansas City, Mo. Member of the Mich. State Pharmaceutical Association.
- HOPPER, CHARLES H.—A pharmacist for some time at Chattanooga, Tenn. In the firm of Ayers and Hopper, Surveyors, Cherry Grove, Ohio.



- GRIGGS, OAKLEY.—President of the Oakley Griggs Drug Co., Streator, La Salle Co., Ill.
- JOHNSON, CALVIN S.—Pharmacist, Carthage, Ohio.
- LEIST, JACOB L.—Pharmacist, Michigan and King st., Indianapolis, Ind. Member Am. Phar. Assoc.
- MOSS, JOSEPH C.—Pharmacist, Ellensburg, Washington.
- SALLS, JAMES H.—Pharmacist, Lake Crystal, Minn. Member of the Minnesota State Board of Pharmacy.
- STAEHLE, WILLIAM C.—For some years in the practice of pharmacy. Now attorney at law, Tombstone, Ariz. For four years Judge of Probate for Custer Co., Mont., 1884-88.
- STEVENS, ALVISO B.—From 1877 to 1886 a pharmacist and analytical chemist, at 33 Lafayette ave., Detroit; Assistant Professor of Pharmacy in the University of Michigan. Secretary of the faculty of the School of Pharmacy.
- TREMAINE, HENRY A.—Formerly a pharmacist in the firm of Tremaine & Co., Ann Arbor; afterwards chemist with Crouse & Co., vinegar manufacturers at Highland Station, Mich. Secretary and Treasurer of the Crouse-Tremaine Carbon Co., Fostoria, Ohio.
- WELLS, WILLIAM H.—B. A. Univ. Mich. 1874; LL. B. Univ. Mich. 1877. Attorney at law, Detroit, Mich.
- WHITMAN, ALVAH C.—Pharmacist in the firm of A. C. Whitman & Co., Hurley, Wis.
- WILLMARTH, GEORGE E.—Pharmacist in the firm of Willmarth & Hazelton, 5 Market st., Pottsdam, N. Y. In 1876-9 chemist with the house of Wm. S. Merrell & Co., Cincinnati, O.
- WOOD, CHARLES.—Pharmacist, Los Angeles, Cal. (?)
- YOUNG, ABRAM VAN E.—Ph. B. Univ. Mich. 1875. Fellow in Johns Hopkins Univ. in 1875-7. Professor of chemistry in the Northwestern University, Evanston, Ill.

## 1876.

- ALLEN, SAMUEL E.—In firm of S. E. Allen & Co. Manufacturing and Dispensing Pharmacist and Wholesale Dealer, Akron, O. Member Ohio State Phar. Assoc.
- AMES, JOSEPH H.—Pharmacist, Three Oaks, Mich.
- BEACH, LYMAN F.—Pharmacist in the firm of Mason & Beach, Bay City, Mich. Member of the state pharmaceutical association.
- BOWER, FRANCIS T.—Pharmacists and manufacturing chemists, 802 Cherry st., Toledo, Ohio. President of the Ohio State Board of Pharmacy. Secretary Toledo Phar. Assoc. Pharmacologist, Staff of St. Vincent's Hospital. Director of Retail Druggists' Mutual Fire Insurance Assoc.

- BUCKHAM, JAMES N.—M. D. Univ. Mich. 1878. Physician, 120 South First st., West, Flint, Mich. Surgeon C. G. T. Ry., Secretary U. S. Board of Pension Examiners. Member Am. Med. Assoc.
- BURROUGHS, CHARLES S.—Manufacturing chemist, Clinton, Mich. Member of the state pharmaceutical association.
- CHURCHILL, ORRIN L.—Pharmacist in firm of Churchill & Webster, Jamestown, N. Dakota, and Great Fall, Montana.
- CLARK, JOHN T.—Retired, Clinton, Mich.
- COUGHLIN, JEREMIAH.—M. D. Univ. Mich. 1877; M. A. College St. Francis Xavier, 1878. Physician to the New York Asylum for Lying-in Women, 183 Henry st., New York. (?)
- DIETRICH, CHARLES W.—In firm of W. M. Dietrich & Co., Furniture Manufacturers' Agents, 250 Wabash ave., Chicago, Ill.
- DINGLEY, CHARLES A.—Pharmacist, Polo, Ill.
- EDDY, CHARLES H.—Pharmacist at Great Barrington, Mass. Member Amer. Phar. Assoc. (?)
- FULLER, LOUIS C.—M. D. Univ. Mich. 1879. Physician, 111 E. 12th st., Kansas City, Mo.
- GREENE, MORRIS U.—Pharmacist, with Baldwin Bro., Jamestown, N. Dakota.
- GRIMWOOD, CHARLES.—Manufacturing pharmacist with S. E. Allen (Ph. C. '76), Akron, Ohio.
- GUNDRUM, GEORGE.—Pharmacist, Ionia, Mich. Late President state pharmaceutical association. Member State Board of Pharmacy.
- HOLLOWAY, WILLIAM J.—Pharmacist in firm of W. J. & L. L. Holloway, Hastings, Mich. In 1875-6 assistant in analytical chemistry in University of Michigan.
- JAMES, HENRY F.—Formerly Pharmacist, Third and Linden ave., Dayton, Ohio. Agent of the National Cash Register Co., 6 Mich. ave., Detroit, Mich.
- LITTLE, JOHN R.—Pharmacist in charge until 1889. Book-keeper, Phoenix Nursery, Bloomington, Ill.
- LYNN, JAMES.—Pharmacist in the firm of Lynn & Leedy, dealers at wholesale and retail, Wabash, Ind.; also in the firm of Leedy Brothers & Lynn, Andrews, Ind., and in house of Lynn, Leedy & Dougherty, wholesale dealers, Huntington, Ind.
- MASSEY, FRANK W. H.—M. D. Univ. City of N. Y. 1884. Physician, Brownville, N. Y. President of Jeff. Co. N. Y. Med. Society, 1894.
- MORGAN, JAMES W.—For some time a pharmacist with R. Hall, Three Rivers, Mich.; afterwards chemist for lead and zinc mines, Carl Junction, Mo. President of "The Billingham Bay National Bank," Whatcom, Wash.

- \*PARSONS, HENRY BETTS.**—Phar. M. Univ. Mich. 1885. Assistant in pharmacy in the University of Michigan, 1876-7 and 1877-8. In 1878-81 assistant chemist in the Department of Agriculture, Washington. Appointed professor of materia medica in the National College of Pharmacy, 1881. Member of the Committee of Revision of the U. S. Pharmacopœia of 1880. From 1881 to 1884 chemist and superintendent of the manufacturing works of W. H. Shieffelin & Co., New York. Member of the board of trustees of the New York College of Pharmacy. In 1884-5 editor of the Druggists' Circular. Died at Tucson, Arizona, August 21, 1885.
- PIERRON, JOEPII J.**—M. D. Col. of P. & S. Chicago 1893. Pharmacist, 355 Fifth ave., Chicago, Ill.
- RISSE, EDWARD J.**—Formerly engaged in pharmacy. Member of the firm of Geo. White & Co., importers and jobbers, 217 Court ave., Des Moines, Iowa.
- ROYS, HERMAN M.**—B. S. Univ. Mich. 1875. Pharmacist in the firm of A. H. Roys & Co., Farwell, Mich. Member of the state pharmaceutical association. Editor of Farwell Register.
- SHEFFIELD, WILLIAM C.**—Pharmacist, with J. N. Letoneneau, M. D., Laconia, N. H.
- SMITH, STEWART W.**—B. A. Univ. Mich. 1873; M. D. Univ. Mich. 1877. Physician, Port Huron, Mich. (?)
- STEWART, THOMAS M.**—Pharmacist, 700 Cookman ave. Asbury Park, N. J.
- \*WATSON, CATHARINE M.**—Resident graduate, Univ. Mich. 1876-77. DIED, July 20, 1877, in Ann Arbor.
- \*WHITLARK, WALTER J.**—DIED, July 28, 1888, in Ann Arbor, Mich.

## 1877.

- AVERY, JOHN H.**—Mass. Institute Technology, 1877-8. Lumber dealer, Detroit, Mich.
- \*DIXON, GLEASON FILMORE.**—For some years a pharmacist at Jackson, Mich., and at San Francisco, Cal. Died in Ann Arbor, Dec. 19, 1890.
- GATES, WILLIAM H.**—Pharmacist, and cashier of state bank, Milton Junction, Wis.
- GRIFFITH, WILLIAM F.**—Commercial pharmacist with the house of Farrand Williams & Clark, Detroit, Mich. Member of the state pharmaceutical association. Address, Howell, Mich.
- HALLOCK, ALBERT A.**—M. D. Univ. Mich. 1880. Physician and surgeon, Massillon, Stark Co., Ohio.
- HAUCK, THEODORE.**—Pharmacist in the firm of Theo. Hauck & Co., Columbus Grove, Ohio. Member of the Ohio State Pharmaceutical Association.

- HARRIS, BAGLEY A.—Pharmacist in firm of Harris & Thompson, Flint, Mich.
- HUBBARD, FRANK J.—M. D. Univ. Mich. 1879. Dealer in grain and wool, Galesburg, Mich. In the practice of pharmacy until 1884, Battle Creek, Mich.
- HUMISTON, KENT P.—Pharmacist and proprietor of Grove Drug Store, 546 Lorain st., Cleveland, Ohio.
- JOHNSON, MARION ELIZA.—Apothecary in the New England Hospital for Women and Children, Boston, Mass. Residence 64 East Chester Park.
- \*JOHNSON, JOHN S.—Formerly pharmacist in the firm of J. S. Johnson & Co., Hudson, Wis., (in company with E. E. Gatchell, Ph. C. 1881), also druggist in Newark, Ohio. Died May 22, 1891.
- JOHNSON, JOSEPH J.—In grain culture, Westfield, N. Y.
- KERLEY, ABRAM P.—Pharmacist and chemist in the firm of A. P. Kelly & Co. 215 Boulevard, Amsterdam ave. & 70th st. west, New York. Member of the Society of the New York College of Pharmacy.
- KIRK, DAVID.—M. D. Detroit College Medicine 1888. Jordan, Minn.
- KNAPP, VICTOR.—M. D. Ohio Med. College, 1881. For some years in the practice of pharmacy. Physician, Ferdinand, Ind.
- LEWIS, DENSLOW.—M. D. Univ. Mich. 1878. Physician, 217 53d st., Chicago, Ill. Gynæcologist to Cook Co. Hospital, 1892. Special Commissioner from Ill. State Board of Health, and Health Dept. of Chicago, for the investigation of municipal sanitation in European cities.
- LOBB, ARTHUR S.—Pharmacist, Frankfort, Mich.
- LOGAN, ROBERT.—M. D. Univ. Mich. 1876: M. D. College Physician and Surgeons, New York, 1877. Coll. Physicians and Surgeons, Edinburg, Scotland, 1879. M. R. C. S., London, Eng., 1883. Physician, Ionia, Mich.
- LONG, WILLIAM L.—M. D. Pulty Medical Coll. Cincinnati, Ohio, 1890. Physician, New Haven, Ohio.
- PARKHILL, STANLEY E.—Pharmacist in the firm of Parhill & Son. Owosso, Mich. Member of the State Board of Pharmacy of Michigan. Member U. S. Ph. Convention of 1890. Member Am. Phar. Assoc.
- POST, MARY E.—Teacher in Granger Place School, Canandaigua, N. Y.
- SMITH, J. HUNGERFORD. Member of the New York State Board of Pharmacy from 1884 to 1891. Member of the Am. Phar. Assoc., and of the New York State Pharmaceutical Association. For some time analytical and manufacturing chemist, Plattsburgh, N. Y. Pres. J. Hungerford Smith Co., manufacturing chemists, Rochester, N. Y.

- REED, ELWOOD M.—Chemist in charge of the analytical and man'f. dept' of The J. Hungerford Smith Co., Rochester, N. Y.
- STEVENS, RANSOM H.—M. D. Univ. Mich. 1878. Physician, 129 Monroe st., Grand Rapids, Mich. In charge of Michigan Soldier's Home Dispensary; surgeon to the Michigan Soldier's Home and to Burton avenue Lying-in Hospital; consulting physican to the Woman's Home Hospital. Member U. S. Ph. Convention of 1890.
- STONE, CLARENCE G.—Traveling salesman with The Doliber Goodale Co. Boston. Until 1882 a prescription pharmacist in Detroit. Member of the Am. Phar. Assoc., and of the state associations of Michigan and Wisconsin. Address 580 Lafayette ave., Detroit, Mich.
- TOMPKINS, J. WARREN.—For some years a pharmacist in New York. In dry goods business, 95 Partition st., Saugerties, N. Y.
- WYMAN, HUGH S.—M. D. Michigan College of Medicine, 1882. Physician and Surgeon, Olympia, Wash.
- YOUNG, ARTHUR L.—In 1890-1 the chemist of a sugar refinery in the Phillipine Islands. Vice-President of the firm of Wakelee & Co. importers, wholesale and retail in drugs, Chemicals, etc. cor. Brush and Montgomery st., San Francisco, Cal.

## 1878.

- BROOKS, FRANK A.—Pharmacist, formerly at Gonzales, then at Galveston, Texas. Some time the professor of chemistry and botany at Goliad Military College, Goliad, Texas. Now at Corpus Christi, Texas.
- CALKINS, HULETT W.—Formerly a dispensing pharmacist at Mt. Clemens, Mich., then commercial pharmacist with Parke, Davis & Co., Detroit.
- EGEROFF, ALEXANDRINE.—MRS. FULLER.—B. S. St. Petersburg, Russia; M. D. Univ. Mich, 1878. No. 120 Griswold st., Detroit, Mich.
- \*GIBSON, ELDRIDGE D.—For many years pharmacist for James Vernon, 235 Woodward ave., Detroit, Mich. Died, Nov. 14, 1888.
- \*HASBROUCK, WILLIAM A.—Pharmacist in the firm of Hasbrouck & Terry, Seattle, Washington. Died in July 1890.
- HEIM, HENRY.—Pharmacist in the firm of H. & W. Heim (classes of '78 and '82), East Saginaw, Mich.
- HEISTER, CYRUS W.—Pharmacist in the firm of Morganthaler & Heister, Massilon, Ohio. Member Ohio State Pharmaceutical Association.
- \*KOEHNLE, OSCAR HERMAN.—For many years a pharmacist, Sixth and Market sts., St. Louis, Mo. Died in Ocala, Florida, June 25, 1888.

- LUPINSKI, HUGO.—M. D. Univ. Mich. 1882. Physician, Grand Rapids, Mich. From 1882 to 1887 the Assistant Demonstrator of Anatomy, University of Michigan. Formerly in the practice of pharmacy.
- MEYER, THEODORE F.—Manager and First Vice-President in the firm of Meyer Brothers Drug Co., importers and wholesale druggists, Clark ave., 4th st. and Broadway, St. Louis, Mo.
- MILLER, JOHN J.—M. D. Homœopathic Med. Col. Univ. Mich. 1880. Physician, San Jose, Cal.
- MOODY, LUCIUS W.—Analytical and manufacturing chemist. Some time in charge of the pharmaceutical and perfume laboratory of Vogeler, Son & Co., Baltimore, Md. Proprietor of Moody's Pharmacy. Member of the Oregon State Board of Pharmacy, Portland, Oregon.
- SEYFFARDT, LOUIS E.—Some time a pharmacist at 1501 Clinton st., St. Louis, Mo.
- SMITH, AMASA D.—Pharmacist, 142 Merrimack st., Manchester, N. H. Member New Hampshire State Pharmaceutical Association.
- SPENCER, ELLERY.—Pharmacist in the firm of Spencer & Co., Barre, Massachusetts. Member Massachusetts State Phar. Association.
- STECHER, HENRY W.—Pharmacist in the firm of Stecher Bros., 1066 Pearl St., Cleveland, Ohio. Charter member of the Cleveland Pharmaceutical Association, and of the Cleveland School of Pharmacy. In 1877-78 assistant in analytical chemistry in the University of Michigan. Professor of Pharmacy in the Cleveland School. Acting secretary and treasurer of the Pearl Street Bank.
- THUM, HUGO.—Pharmacist in the firm of H. & F. Thum (classes of '78 and '80), Grand Rapids, Mich. Analytical Chemist. Member of the State Pharmaceutical Association.
- TOWNSEND, PERRY L.—Teacher, Dixboro, Mich.
- WALLACE, ROBERT H.—Manufacturing pharmacist in firm of Canning, Wallace & Co., 109 Front st., Portland, Oregon.
- WILSON, GEORGE E.—Van Wert, Ohio. Pharmacist, late of the firm of Hill & Wilson.
- WRAMPMEIER, THEODORE J.—A. B. Univ. Mich. 1878. In 1885-86 Assistant Professor of Organic Chemistry and of Pharmacy in the University of Michigan; from 1881 to 1885 secretary of the faculty and Instructor in the School of Pharmacy; in 1883-84 in the Universities of Strasburg and Zurich. Member of the Chemical Society of Berlin. Chemist and manager Western Fertilizer and Chemical Works; also chemist for U. S. Internal Revenue at San Francisco, and for the San Francisco Chemical Works. Address, 909 Steiner st., San Francisco, California.

WORDEN, CLINTON E.—Manufacturing pharmacist, president and manager in the firm of Clinton E. Worden & Co., 214 to 220 Townsend st., San Francisco, California.

## 1879.

ARMSTRONG, IRA A.—Pharmacist. Some time with Craig & Stewart, 285 Lake ave., Rochester, N. Y. Clifton, N. Y.

AYRES, JAMES N.—M. D. Homœopathic Med. Col. Univ. Mich., 1889. Physician, 334 S. Burdick st., Kalamazoo, Mich.

BOWEN, ROYAL F.—Commercial pharmacist with H. Bosworth & Sons, 337 E. Water st., Milwaukee, Wis.

CAMPBELL, WILLIS G.—Ph. B. Univ. Mich. 1876. Pharmacist with John Campbell, 1415 Court Place, Denver, Colorado.

CHURCH, WILLIAM D.—General agent for Michigan for Parke, Davis & Co., Detroit, Mich. Member Michigan State Pharmaceutical Association.

COLE, WILLIAM W.—For some time a pharmacist in Omaha, Neb. Manager of Consolidated Coffee Co., 1414 Harney st., Omaha, Nebraska.

DAWSON, BYRON F.—M. D. Univ. Mich. 1886. From 1881 to 1884 a manufacturing chemist; previously a dispensing pharmacist. In 1878-79 assistant in operative pharmacy in the University of Michigan. Secretary Fulton County Board of Health. Member of the Convention of Revision of the U. S. Pharmacopœia of 1890, Physician, Kewana, Indiana.

EATON, JOHN McC.—Business manager of The Registered Pharmacist, 175 Dearborn st., Chicago, Illinois. Member of Illinois State Pharmaceutical Association.

FINLEY, WILLIAM E.—Pharmacist. Address, Hastings, Mich.

GAGE, CHANNING T.—Electrician of the Edison Light and Power Co., Allegan, Mich. Previously a pharmacist at 333 Woodward ave., Detroit.

HAWLEY, EDWIN P.—M. D. Western Reserve College 1884. Physician, 1666 Broadway, Cleveland, Ohio. Physician to city Board of Health. Formerly in practice of pharmacy.

HEIMBACH, SYLVESTER J.—Pharmacist in the firm of Heimbach & Jacobs, Constantine, Mich. Member of the State Pharmaceutical Association.

HOUGHTON, PHILIP S.—In the firm of P. S. Houghton, general merchandise, and the Houghton Farming Co., Galesburg, Dakota. Previously a pharmacist in Dakota.

JENSEN, PAUL C.—M. D. Univ. Mich. 1882. In the practice of pharmacy until 1880. Member American Medical Association. Physician and surgeon, Manistee, Mich.

KELLY, JOHN P.—M. D. Univ. Mich. 1881. Physician, Golden, Colorado.

- KOONS, CHARLES W.—Pharmacist, Canton, Ohio. Member of the Ohio State Pharmaceutical Association.
- MULL, ROBERT F.—A. M. Mercersberg College. Cashier First National Bank, Philipsburg, Pa. Formerly a pharmacist.
- ORTH, LOUIS P.—Pharmacist, Pender, Neb.
- OSBORNE, DANIEL E.—M. D. Univ. Mich 1884. In the Department of Literature, Science and the Arts from 1879 to 1881. Physician. Some time in the service of American Board of Foreign Missions in China. Address, care of the U. S. Consul, Tientsin, China.
- PARKER, ARTHUR S.—Pharmacist, 747 Woodward ave., Detroit, Mich. From 1883 to 1885 president of the Detroit Pharmaceutical Association. President of the State Pharmaceutical Association.
- VANDIVERT, ARTHUR H.—Lately a pharmacist in the firm of Vandivert Brothers, Los Animes, Colorado. In 1878-79 Assistant in Analytical Chemistry in University of Michigan. Bethany, Missouri.
- WALKER, ALFRED L.—Pharmacist at 415 Woodward ave., Detroit. Previously manufacturing chemist with Swift & Dodds, wholesale Druggists, Detroit.
- WEHRLI, ALBERT C —Ph. G. Chicago 1878. Pharmacist. (?)
- WILSON, FREDERICK L. Pharmacist, San Francisco, Cal.
- WOOD, LOUIS N.—Pharmacist and wholesale druggist, 307 W. Superior st., Duluth, Minn.

## 1880.

- CLARK, JAMES B.—Investment broker and dealer in mortgage loans, Sioux Falls, S. Dak. Previously a pharmacist at Mt. Carroll, Ill.
- FELLOWS, CLARENCE A.—Pharmacist. Member of the State Pharmaceutical Association. Three Rivers, Mich.
- FOOTE, CHARLES E.—Chemist in the firm of Foote & Jenks, perfumers, Jackson, Mich. Member of the State Pharmaceutical Association.
- GEISLER, JOSEPH F.—From 1880 to 1883 Assistant in Analytical Chemistry in the University of Michigan. Analytical and consulting chemist. Manager of Gersler-Relsieg Co. Chemist to the N. Y. State Department of Agriculture and to the N. Y. Mercantile Exchange. Fellow of the Chemical Society of London. Office, New York Mercantile Exchange Building, 6 Harrison st., New York.
- GLAZIER, FRANK P.—Pharmacist in the firm of Frank P. Glazier & Co., Chelsea, Mich. In 1882 in the University of Heidelberg. Member of the State Pharmaceutical Association.



- GEBAUER, CHARLES J.—With Evans-Gallagher Drug Co., 5th and Washington sts., Kansas City, Kan.
- IRWIN, JOHN L.—M. D. Univ. Mich. 1889. From 1880 to 1887 the manufacturing chemist with the Wm. S. Merrell Chemical Co., Cincinnati, Ohio. In 1879-80 Assistant in Operative Pharmacy in the University of Michigan. In 1889-90 in medical studies in Vienna. Member American Medical Association. Physician, 230 Third st., Detroit, Mich.
- JUDSON, FRANK E.—Pharmacist in the firm of Judson Brothers, Brighton, Mich. Member of the State Pharmaceutical Association.
- LILLY, EUGENE A.—Insurance agent, Minneapolis, Minn.
- LONSTORF, GEORGE J.—In 1881-82 resident graduate in the School of Pharmacy, Univ. Mich. Chemist for Iron Stock and Mining Properties, 232 11th st., Milwaukee, Wis.
- MAAS, FRANK N.—Humboldt, L. S.
- MANN, ALBERT.—Pharmacist in the firm of Mann Brothers, Ann Arbor. Member of the Michigan State and the American Pharmaceutical Associations.
- MARSHALL, ENOCH S.—Pharmacist, 2301 Independence ave., Kansas City, Mo.
- \*McCULLOCH, ROLLIN S.—Pharmacist in the firm of McCulloch & Son, F. emont, Ohio. Member of the Ohio State Pharmaceutical Association. Died March 3, 1892.
- MERRITT, FRED D.—Pharmacist and analytical chemist. Member of the Iowa State Pharmaceutical Association. Strawberry Point, Iowa.
- PAYNE, CHARLES E.—Pharmacist, Port Clinton, Ohio. Member Ohio State Pharmaceutical Association.
- PERRY, FRED W. R.—Pharmacist, 709 Woodward ave., Detroit. Member American Pharmaceutical Association and of the State Pharmaceutical Association; president State Board of Pharmacy.
- REEVE, CHARLES J.—M. D. Jeff. Med. Coll. 1886. Visiting physician to the St. Elizabeth Hospital and to the Soldiers' Home, Dayton. Physician, Dayton, Ohio.
- RODI, CHARLES H.—M. D. Univ. Mich. 1882. Physician, Calumet, Mich. Assistant physician, Tamarack Mine. Formerly prescriptionist at the Eastern Michigan Hospital for the Insane, Pontiac, Mich.
- TEETER, CHARLES W.—Pharmacist, Peoria, Ill., and in the firm of Teeter & Co., Wyoming, Ill. Chemist for the Cuzco Manufacturing Co. Address, Peoria. Member of Illinois State Pharmaceutical Association.
- THUM, FERDINAND.—Pharmacist in the firm of H. & F. Thum (classes of '78 and '80), Grand Rapids, Mich.

- TODD, ADRIAN H.—Member N. Y. State Pharmaceutical Association. Manufacturers' Agent and Broker in Druggists' Specialties, 204 Superior st., Cleveland, Ohio.
- WATSON, JOHN B.—Pharmacist, Coopersville, Mich. Member of the State Pharmaceutical Association.
- WOLF, FRANK C.—Some time in the practice of pharmacy in Memphis, Tenn. Pharmacist, Main and 5th sts., Los Angeles, Cal.

### 1881.

- ALLEN, JAMES A.—Ph. G. Ontario Coll. Phar. 1882. Pharmacist, 326 Spadina ave., Toronto, Ontario. (?)
- BAILEY, FRED C.—M. D. Univ. Mich. 1883. Physician, Adams Center, N. Y.
- BANCROFT, RICHARD B.—Pharmacist in the firm of Hogaboom Co., Hot Springs, Arkansas.
- BECKER, CHARLES L.—Pharmacist in the firm of Chas. L. Becker & Co., 304 Main st., Ottawa, Kansas. Member Kansas Pharmaceutical Association. Member of the Decennial Convention of the Pharmacopœia of 1890.
- CIRKLER, CHARLES H.—Pharmacist, 602 Nicolet ave., Minneapolis, Minn.
- GATCHELL, ERNEST E.—Pharmacist, Hudson, Wis. Formerly manufacturing chemist with T. Schumann, Atlanta, Ga.
- GUNDER, SAMUEL H.—Traveling salesman for Johnson & Johnson, New York. Secretary of Gunder & Payson Co. (?)
- HARRINGTON, HARRIET L.—M D. Univ. Mich. 1883, Member (by examination) Mass. State Med. Soc. Physician, 760 Dudley st., Dorchester District, Boston, Mass. Visiting physician to the New England Dispensary. Formerly apothecary to the New England Hospital for Women and Children.
- HUHN, CHARLES H.—Pharmacist cor. Western and Lindale ave., also commercial pharmacist with the Lyman Eliel Drug Co., 208 Western ave., Minneapolis, Minn.
- KNAPP, LOUIS B.—Analyt. Chemist in Denver, Col., in 1882. In practice of Pharmacy at Danbury, Neb. (?)
- LOOMIS, JOHN H.—Manufacturing chemist with the Richardson Drug Co., Omaha, Neb.
- LOVIN, CLYDE C.—M. D. Univ. Mich. 1884. U. S. Examining Surgeon, Physician and Pharmacist. Health Officer of Kearney County, Lakin, Kansas.
- McCREA, HENRY F.—Pharmacist, cor. 17th and Champa sts., Denver, Col.
- MORSE, ERNEST H.—Pharmacist. Some time in the firm of E. H. Morse & Co., Flint, Mich. Pharmacist with F. H. Whitney, Wayland, Mich.

- NOLL, MATTHIAS.—Pharmacist. 605 Commercial st., Atchison, Kansas. Ex-Pres. of Kansas State Pharmaceutical Association. Sec. of the Atchison Retail Druggists' Association.
- PARKER, FRANK C.—Pharmacist in the firm of Montgomery & Parker, 419 Hampshire st., Quincy, Ill.
- PARROTT, BURTON E.—Mgr. of the firm of Parrott-Taggart Bakery of the United States Baking Co., Indianapolis, Ind. Previously an assistant in pharmacy in Indianapolis.
- PARSONS, CHARLES W.—From 1883 to 1887 the professor in analytical chemistry in the New York College of Pharmacy. In 1892-3, manufacturing pharmacist with the house of W. H. Schieffelin & Co., New York, Editor of the *Pharmaceutical Era*, 106 Fulton street, New York, N. Y. Member of the Pharmacopœial Convention of Revision for 1890.
- \*QUAYLE, WILLIAM THOMAS.—Had entered the practice of pharmacy, with J. R. Hofflin, Minneapolis. Died December 5, 1882, at Lake, Wis.
- REYER, THEODORE A.—Some time a pharmacist in the firm of Reyer & Blum, 337 St. Aubin st., Detroit. Main and Liberty sts., Ann Arbor, Mich.
- ROOD, GEORGE W.—Farmer. Lapeer, Mich. Previously a pharmacist with W. D. Bristol, Lapeer.
- SCHMID, THEOPHILUS.—Pharmacist, 11,100 Michigan ave., Chicago, Ill. Member of the Illinois Pharmaceutical Association. Member of the Chicago College Pharmacy.
- SCHMIDT, SAMUEL.—Pharmacist at 2285 First ave., New York.
- SEXTON, WILLIAM A.—Pharmacist, Marsfield, Wis.
- TEXTOR, OSCAR.—In 1881-3, assistant in quantitative analysis, University of Michigan. From 1883 to 1894 the chemist of the Cleveland Rolling Mill Co. Analytical Chemist and Metallurgist 158 Superior st., Cleveland, Ohio.
- THOMPSON, FRANK A.—Resident graduate in the University in 1882-3. For several years a prescriptionist. Chemist in charge of the analytical laboratory of the works of Parke, Davis & Co., Detroit. Member of the Convention of Revision of the Pharmacopœia of the United States for 1890. Secretary Mich. State Pharmaceutical Association.
- THOMPSON, CARY W.—Some time chemist for the London Mining Co., Leadville, Colorado. Pharmacist, San Diego, Cal.
- TURNER, DEL D.—Pharmacist in the firm of D. D. Turner & Co. Northfield, Minn.
- WARD, RALPH M.—Pharmacist, Yankton, S. Dak. In 1881-3 manufacturing pharmacist with the house of W. H. Schieffelin & Co., New York.
- WHEELER, ALBERT M.—M. D. Univ. Mich. 1883. Physician to Huron Mine, Hancock, Mich.

- WILLIAMS, SEWARD W.**—Chemist for the manufacturing works of Seabury & Johnson, 21 Platt st., New York, works at East Orange, N. J. In 1884-6 editor of the Weekly Drug News. In 1881-2 assistant in analytical chemistry, University of Michigan. Member Am. Chem. Soc., New York State Pharmaceutical Association, and of Am. Phar. Association.
- WILSON, OSCAR L.**—Ph. B., Ill. Wesleyan Univ., 1888. Pharmacist. Some time in the firm of O. L. Wilson & Co., Mattoon, Ill. Danville, Ill.
- WURMB, THEODORE H.**—Proprietor of pharmacies at 1923 East Grand avenue, and corner Eleventh and Salisbury streets, St. Louis, Mo. Member St. Louis Society of Microscopists, and of Mo. State Phar. Assoc.

## 1882.

- ALLMENDINGER, CHARLES G.**—Resident graduate at the University, 1882-4. Foreman of the Fluid and Solid Extract Department in the Manufacturing Laboratory of Frederick Stearns & Co., Detroit, Mich., 1884-91. Chemist and Perfumer with Williams, Davis Brooks & Co., 26-38 Congress st., Detroit.
- BROCKMEIER, JOHN H.**—Formerly pharmacist. Now Cashier Farmer's and Mechanics Bank, and Secretary and Treasurer of Burdett Organ Co., Freeport, Ill.
- CARLEY, GEO. L.**—Manufacturing chemist with Aldo Sommer Drug Co., Quincy, Ill.
- CLARKE, GRAHAM.**—Chemist and proprietor of Cleveland Nitrous Oxide Works, 106 Canal st., Cleveland, Ohio. Previously analytical chemist with W. E. Judson, Cleveland.
- CRAMPTON, CHARLES A.**—B. L. Univ. Mich. 1882; M. D. Columbus Med. Coll., 1884. Chemist U. S. Department of Agriculture, Division of Chemistry, 1884 to 1890. Chemist of the Internal Revenue Department. Washington, D. C.
- CROMBIE, SAMUEL M.**—Chemist with Chas. Baumbach Co., wholesale druggists, Milwaukee, Wis.
- CUNNINGHAM, HAROLD.**—Pharmacist, Bodeau Block, Lima, Ohio.
- DEAN, GEORGE E.**—Manager of the Hale Elevator Co., Minneapolis, Minn.
- \*DENISON, JOHN JULIUS.**—Until 1885 analytical chemist with the house of F. Stearns & Co., Detroit. Died, Aug. 21, 1886, at Whitewater, Wis.
- DEYO, LEROY H.**—Pharmacist, Red Cloud, Nebraska.
- DILWORTH, MAY.**—MRS. JOSEPH A. COMLY.—Wilmington, Del. Address, Third and Orange sts.
- DODD, CHARLES W.**—M. D. Univ. Mich. 1884.—In 1882-3 assistant analytical chemist in the University of Michigan. In 1887-8 in the University of Vienna. Physician, in ophthalmic practice, 908-909 Neave Bld'g, Cincinnati, Ohio.

- FASQUELLE, LOUIS J.—Pharmacist, Petoskey, Mich. Member of the State Pharmaceutical Association.
- GESSLER, MAXIMILLIAN.—Member Am. Phar. Assoc., Wis. State Phar. Assoc., Wis. State Historical Society, and Milwaukee Microscopical Society. Drug manufacturer at 306 and 308 Reed st., Milwaukee, Wis.
- GOECKER, LOUIS.—Pharmacist with W. B. Moore, East Saginaw, Mich.
- GOODRICH, LESTER A.—A. B. Hillsdale College. Pharmacist in the firm of L. A. Goodrich & Co., Hillsdale, Mich. Member of the State Pharmaceutical Association.
- GREENE, ARTHUR L.—Professor of Chemistry and Dean of the School of Pharmacy, Purdue University, La Fayette, Ind. Member Am. Phar. Assoc., Am. Chem. Soc., Am. Assoc. Advanc. Sci., and Ind. State Phar. Assoc.
- HEIM, WILLIAM.—Pharmacist in the firm of H. & W. Heim (classes of '78 and '82), East Saginaw, Mich. From 1882 to 1884 manufacturing pharmacist with Eberbach & Son, Ann Arbor.
- HOEHN, JOHN.—Pharmacist, Cleveland, Ohio, Cobb & Bradley's Euclid ave. block. Member Cleveland City Pharmaceutical Association. (?)
- HUBBARD, THOMAS H.—M. D. Univ. Penn. 1885. In Europe in 1887. Secretary Ohio State Medical Society. Physician, 205 Ontario st., Toledo, Ohio.
- JONES, ALFRED A.—Pharmacist in the firm of Jones & Panches, Elkhart, Ind.
- JOSENHANS, REINHARDT J. C.—Pharmacist, 242 W. North ave., Chicago, Ill.
- KENNEDY, EZRA J.—Pharmacist with F. W. R. Perry (Ph.C. 1880), 707 Woodward ave., Detroit, Mich., until 1892. Member Am. Phar. Assoc. and Mich. State Phar. Assoc. Prof. of Pharmacy in Detroit Medical College from 1891 to 1894. Pharmaceutical Editor of Pharmaceutical Era. 106 Fulton st., New York, N. Y.
- LONGSTAFF, CHARLES H.—Pharmacist with Dr. L. C. Waters, Huron, S. Dakota.
- LONGWELL, EDGAR B.—Formerly in G. W. Longwell & Son's, Jackson, Mich. Member of the State Pharmaceutical Association. Pharmacist, Paw Paw, Mich.
- MCNEIL, MARY—MRS. JOHN O. REED.—B. L. Univ. Mich. 1885. Some time teacher in the High School at East Saginaw, Mich. Address, Ann Arbor, Mich.
- MEREDITH, ELMER E.—Ph. B. Ohio Wesleyan Univ. Pharmacist in the firm of Meredith & Damon (B. W. Damon, Ph. C. 1883), two pharmacies, until Dec. 1, 1894. Now secretary and general manager of New Spencer Medicine Co., 300 Center st., Chattanooga, Tenn.

- \*MORRIS, JOHN EATON.—Died Sept. 18, 1882, at Bluffton, Ohio.
- OLES, FRANKLIN R.—Analytical chemist and mineralogist, Loughridge, Murray Co., Ga.
- PALMER, GEO. H. M.—Some time pharmacist at Bellefontaine, Ohio. Insurance agent, Kenton, Ohio.
- PRYER, CLARA E.—MRS. EUGENE C. BARTLETT.—Ann Arbor, Mich. Formerly in the practice of pharmacy with Bennett & Ellis, South Lyon, Mich.
- RANSOM, ROBERT B.—Office of the Commissioner of Railroads, Lansing, Mich. Formerly in the practice of pharmacy.
- ROCKWELL, ORLIN M.—Pharmacist with C. A. Young, Battle Creek, Mich. Address, 7 N. Jefferson st.
- ROYER, THEODORE.—B. A. Univ. Mich. 1883. Chemist of Centralia Nail Works, Centralia, Ill. In 1884–85 Assistant in Quantitative Analysis in the University of Michigan.
- STINSON, EDWIN L.—Pharmacist, Little Falls, Herkimer Co., N. Y.
- THORNBURGH, THOMAS R.—Pharmacist, 190 Central ave., Indianapolis, Ind.
- VAN DEN BELT, NICHOLAS.—Pharmacist, 612 Dix ave., Detroit. Member of Michigan Pharmaceutical Association.
- WHITE, WILLIAM H.—M. D. Univ. Mich. 1883. Physician, 73 Monroe st., Grand Rapids, Mich.
- WICKWIRE, FRANK.—Pharmacist with J. Hoehn (Ph. C. 1882), 1228 Euclid ave., Cleveland, Ohio. (?)
- ZERSE, OTTO G. Pharmacist, La Fayette, Ind. Lecturer on Materia Medica in the School of Pharmacy in Purdue University.

### 1883.

- ADLER, SAMUEL W.—In the Missouri Cigar and Tobacco Co., 103 S. Fourth street, St. Louis, Mo. Formerly engaged in pharmacy.
- BABBITT, FRANKLIN T.—Pharmacist in the firm of C. O. Babbitt & Son, Corry, Pa. In 1883–84 dispensing clerk in the chemical laborator, University of Michigan.
- BAIRD, JULIAN W.—A. M. Univ. Mich. 1883. M. D. Harvard 1890. Professor of Analytical and Practical Chemistry in the Mass. College of Pharmacy, Boston, Mass. From 1883 to 1886 Instructor in Assaying and Qualitative Analysis at Lehigh University. In 1882–83 Assistant in Quantitative Analysis, University of Michigan.
- \*BARNABEE, HIRAM S.—Pharmacist in the Northern Michigan Asylum for the Insane, Traverse City, Mich. Died Jan. 19, 1893.
- BASSETT, EMMET C.—In firm of Bassett & Mason, pharmacists, Ann Arbor. Member of the State Pharmaceutical Association. Now employed in the railway mail service.

- COOKE, FREDERICK A.—Pharmacist, 113-115 Michivan ave., Detroit.
- DAMON, BYRON W.—Pharmacist in the firm of Meredith & Damon (E. E. Meredith, Ph. C. '82), two pharmacies, Chattanooga, Tenn.
- DAWSON, JAMES H.—M. D. Univ. Mich. 1885. Formerly physician in Northern Michigan Hospital for Insane, Traverse City, Mich. Now practicing at Marquette, Mich.
- DENNY, JESSE D.—Pharmacist in the firm of Denny & Field, 453 Main St., Buffalo, N. Y.
- FIELD, EDWARD C.—Pharmacist in the firm of Denny & Field, 453 Main st., Buffalo, N. Y.
- FRANK, HERMANN O.—Pharmacist, 435 Milwaukee st., corner of Mason, Milwaukee, Wis. Member of State Board of Pharmacy.
- GIBSON, WALTER McQ.—Resident graduate of the University in 1884. Pharmacist and metallurgical chemist, Colton, Cal.
- GOETTER, FRANK B.—Registered in Illinois as "Graduate in Pharmacy." Pharmacist at Colville, Wash. Mayor.
- HALL, GEORGE C.—Formerly in the firm of Cook & Hall at wholesale and retail, Kiowa, Kansas. For some time chemist with Parke, Davis & Co., Detroit, Mich. In the firm of Hall Bros., wholesale and retail druggists and manufacturers, Kalamazoo, Mich.
- HAUENSTEIN, WILLIAM.—Pharmacist, Amsterdam ave., cor. 78th st., New York. Member Am. Phar. Assoc.
- HIGLEY, WILLIAM K.—Qualified for graduation with the class of '78. Resident student in the University from '78 to '80. Asst. Professor of botany and pharmacognosy in the Illinois College of Pharmacy, Department of Northwestern University. Lecturer on structural and physiological botany in Beloit College. From 1880 to 1885 professor of natural sciences at Geneva Lake Seminary, 711 Warren ave., Chicago, Ill.
- HOLTHOEFFER, HERMAN J.—Pharmacist, with Gale & Block 2736 So. Park ave., Chicago, Ill.
- \*HOSACK, HARRY ERNEST.—Pharmacist, Fredericktown, Ohio. Died Nov. 8th, 1890, at Fredericktown, O.
- KIRCHMAIER, GUSTAVUS A.—Resident graduate in the University in 1884-85. Analytical chemist. Professor in chemistry and toxicology in the N. W. Ohio Medical College, Toledo, Ohio, City Chemist. State Chemist to Ohio Dairy and Food Commission. Member Am. Assoc. Adv. Science. Address, Toledo, Ohio.
- KOON, CHARLES S.—Pharmacist in the firm of Koon and Hopperstead, Mgr's of the Jacob Jesson Co., Muskegon, Mich. Member Mich. State Pharmaceutical Association.

- LEDMAN, OLIVER S.—Chemist to the Columbus Pharmacal Co, 90 N High st., Columbus, Ohio.
- LEFEVRE, EDWARD L.—Manufacturing pharmacist with J. W. Biedelman, 216 Main st., Little Rock, Arkansas. Member Arkansas State Pharmaceutical Association.
- \*OBERMANN, RICHARD FERDINAND.—Died Feb. 21, 1884, at Milwaukee, Wis. Was engaged in pharmacy after his graduation.
- OSTRANDER, REISDORF H.—Pharmacist, Monroe, Mich.
- \*PENGRA, CHARLES P.—M. D. Univ. Mich. 1881. Professor of materia medica and botany in the Massachusetts College of Pharmacy Physician, 130 Dartmouth street, Boston. Professor of dental histology and microscopy in the Boston Dental College. Fellow Am. Assoc. Advanc. Science, and of the Mass. Med. Soc. Member of the Convention for Revision of the U. S. Pharmacopoeia of 1890. From 1881-4 Assistant in Physiological Chemistry in the University of Michigan. Died Jan. 30, 1892.
- RIEGER, CHARLES F.—M. D. Coll. Phys. and Surg. Physician, 1066 Union avenue, Kansas City, Mo.
- ROMANS, EVAN J.—Pharmacist with W. A. Trost & Co. cor. 6th and Minnesota sts., St. Paul, Minn.
- ROOS, CHARLES L.—Pharmacist, New Ulm, Minn. Now Manager of New Ulm Roller Flour Mills.
- SCHMIDT, LOUIS W.—Demonstrator of Chemistry, Fort Wayne College of Medicine. Manager of the pharmacy of B. R. Noll & Co., Fort Wayne, Ind.
- SHAFER, CLARENCE M.—Ohio. Transcribing clerk in office of the Adj. General, Columbus, Ohio, formerly Pharmacist at Canal Fulton.
- SHANAFELT, FREDERICK P.—Pharmacist in the firm of F. P. Shanafelt & Co., Canton, Ohio. In 1883-4 assistant in operative pharmacy in the University of Michigan.
- SOYER, GEORGE P.—M. D. Bellevue Hosp. Med. Coll. Physician, East Saginaw, Mich.
- SPENCER, JOHN J.—With O'Donnell, Spencer & Co., dealers in lumber, East Saginaw, Mich. Previously pharmacist in charge the Simoneau drug store, East Saginaw.
- \*STEVENS, JERRY CHARLES.—Some years a pharmacist with Melville Brothers, Lima, Ohio. Died Feb. 28, 1889.
- TURNER, T. GRANT.—Previously a pharmacist in Quincy, Mich. Real estate and loan agent, Atlantic, Iowa.
- VARNUM, EDWARD C.—Pharmacist in the firm of R. S. Varnum's Sons, Jonesville, Mich. Member of the State Pharmaceutical Association.



**WHITE, BESS WOODS.**—MRS WILBER HAGER, 1885.—Ashland, Royd Co., Ky. Entitled to registration as a pharmacist in Kentucky by decision of the court of appeals of that state, Dec. 15, 1886, confirming the decision of the Jefferson Court of Common Pleas, rendered in Louisville, Ky., March 21, 1884.

## 1884.

**ALLMAND, CHARLES W.**—Farmer, Ann Arbor, Mich.

**BLUM, EDWARD.**—Pharmacist, 337 St. Aubin, Detroit.

**BURKE, WILLIAM H.**—Pharmacist, Grand River ave., and 291 Woodward ave., Detroit, Mich.

**CALKINS, ELEAZER E.**—Pharmacist, State st., Ann Arbor. Previously prescriptionist with A. Parker, Pontiac, Mich. Member Mich. State Phar. Association.

**CASE, EBEN T.**—Pharmacist in the firm of Case and Baldridge, 552 Minnesota ave., Kansas City, Kan.

**COFFIN, CHARLES L.**—Formerly manufacturing chemist in the Coffin & Wood Chemical Company, manufacturers of essential oils, etc., Detroit, Mich. Now consulting chemist 980 Jefferson ave., Detroit, Mich.

**CONRAD, JOHN F.**—Pharmacist in the firm of Conrad Brothers, Otsego, Mich.

**COOPER, WM. H.**—Member of the Mo. State Phar. Assoc. Pharmacist in firm of W. H. Cooper & Co., corner 27th and Welton sts., and Goss and Fairview sts., Denver, Col.

**CRAIG, JOHN T.**—Chemist with Caswell, Massey & Co., pharmacies at Newport, R. I., and 1121 Broadway, and 578 Fifth ave., New York. Address at the last number named.

**CUSHING, GEORGE M.**—Pharmacist with W. H. Cooper & Co., 314 Fairview st., Denver, Col.

**DAMON, WILLIAM E.**—Pharmacist, with Manual Garcia & Co., 113 Calle de Cortez, Mexico City, Mexico.

**DAWSON, GEORGE V.**—Pharmacist in the firm of Dawson & Son, Rochester, Ind. Member Ind. State Phar. Assoc.

**EATON, MATTIE.**—A. M. Lagrange College. Residence 967 N. 27th street, Omaha, Neb.

**FRAZEE, FRANKLIN H.**—Manf'g pharmacist with F. Stearns & Co., Detroit, Mich.

**GARDNER, LLEWELLYN H.**—Superintendent for Frederick Stearns & Co., Detroit, Mich. Prof. Materia Medica, Department of Pharmacy, Detroit College Medicine. Address 415 West Boulevard Detroit, Mich.

**GODFREY, CALVIN P.**—Formerly Pharmacist, Fostoria, Seneca Co., Ohio. Member Ohio State Phar. Assoc. Publisher of the Ottawa Gazette, Ottawa, Ohio.

- HARVEY, CHARLES B.—Manufacturing chemist with the Wm. S. Merrell Chemical Co., Cincinnati, Ohio, (Sixth st. and Eggleston ave.) Professor of materia medica and toxicology in the Cincinnati College of Pharmacy.
- \*HOFFMAN, ADOLPH GUSTAVE.—Died Oct. 8, 1887, at Hot Springs, Arkansas. In 1886-7 a pharmacist in the firm of Lemly & Hoffman, Hot Springs.
- HOGUE, WILMER B.—M. D. Univ. Mich. 1886. Physician, Omaha, Nebraska. (Registered as a pharmacist by examination in Nebraska.) (?)
- HOPPER, ARTHUR G.—Pharmacist and manager with James E. Field & Co., Alpena, Mich.
- HUEBER, CHARLES F.—Pharmacist, 602 Water st., Port Huron, Mich.
- LAKE, CHARLES N.—Some time instructor in qualitative analysis and assaying in Lehigh University, South Bethlehem, Pa. From 1883 to 1885 manufacturing chemist with the house of W. H. Schieffelin & Co., Uruania, Mich.
- \*LEAMON, GEORGE P.—M. D. Jefferson Medical College 1887. In the practice of medicine, Yankton, S. Dakota. Died at Lena, Ill., Oct. 19, 1894.
- MUIR, JOHN D.—Pharmacist in the firm of Muir & Co., 73 Monroe st., Grand Rapids, Mich. Member State Phar. Association.
- \*PEASE, THESUS D.—Some years a pharmacist in the firm of Pease Brothers, Madison, Minn. Died 1888.
- PEYTON, CHARLES S.—Pharmacist, 12th st. and Indiana ave., Kansas City, Mo.
- \*RIEBE, CHARLES.—Died Aug. 10, 1885, in Ann Arbor. After his graduation a pharmacist with A. Frank, 316 Blue Island ave., Chicago, and registered as "Graduate in Pharmacy" in Illinois.
- SCHOTT, ADOLPH A.—Pharmacist in the firm of A. A. Schott & Co., 503 Genesee ave., East Saginaw, Mich.
- SCHUMACHER, ALBERT C.—Manufacturing pharmacist with Eberbach & Son, Ann Arbor, Mich. Member of the Michigan State Board of Pharmacy.
- SMITH, CHANNING.—Resident graduate in the University, 1884-85. Address, 55 Washtenaw ave., Ann Arbor, Mich.
- SNOW, HERBERT W.—Formerly analytical chemist for the manufacturing laboratory of Frederick Stearns & Co., Detroit, Mich. Member Am. Phar. Assoc., Mich. State Phar. Assoc., and Detroit Phar. Assoc. Member of the Convention of Revision of U. S. Pharmacopœia, 1890. In the firm of Snow, Lund & Co., wholesale and retail druggists, Omaha, Neb.
- STEVENSON, WILLIAM E.—Pharmacist, 907 Center ave., Bay City, Mich. Member State Pharmaceutical Association.

- ST. JOHN, WILLIAM I.—M. D. Univ. of Mich., 1892. Physician, Highland Station, Oakland Co., Mich.
- TRAVIS, FREDERICK A.—Pharmacist in the firm of Travis & Baker, St. Johns, Mich. Member of State Pharmaceutical Association.
- WAGGONER, ALBERT T.—Pharmacist with the C. D. Smith Drug Co., St. Joseph, Mo.
- WETZEL, ROBERT M.—Pharmacist for Calumet & Hecla Mining Co., Calumet, Mich.
- WILHITE, EDWIN L.—In charge manufacturing department of E. P. Metz, drug house, corner Eleventh and F. sts., Washington, D. C.
- WYCKOFF, WILL C.—Pharmacist in the firm of W. C. Wyckoff & Co., Rock Rapids, Iowa.

### 1885.

- CLARK, FRANK M.—Pharmacist in the firm of Clark Brothers, Jamestown, New York. Member Am. Microscopical Society; member New York State Pharmaceutical Association.
- CUNNINGHAM, THOMAS N.—Pharmacist, 136 N. Main st., Lima, Ohio.
- DAVIS, CHARLES L.—From 1885 to 1888 assistant in analytical chemistry in the University of Michigan, with charge of the qualitative chemistry of the medical classes. Chemist with the Illinois Steel Co., South Chicago, Ill.
- DUNN, JOHN S.—In pharmacy until recently. Farmer, Edmund, Oklahoma Territory.
- EWELL, HERBERT P.—M. D. Univ. Mich. 1888. Physician, and manager Ewell Times Co., Rochester, Mich.
- FLANDERS, ANSTRICE G.—Tewksbury, Mass.
- \*GEDDES, ALLYN B.—Some time pharmacist with the Kauffman-Latimer Co., wholesale druggists, Columbus, Ohio. Died May 13, 1893, at Algedon, Ionia Co., Mich.
- HAIGH, DE LAGNEL.—For some time manufacturing and analytical chemist in charge of the laboratory of Meyer Bros. & Co., importers and wholesale druggists, 6 N. Second st., St. Louis, Mo. Member Am. Phar. Assoc., Pres. International Rock Wall Plaster Co., New York. General manager of Rock Plaster Co., New York. Member of Amer. Chem. Soc., New York. Address, 44 Broadway, New York.
- LAUER, BENJAMIN J.—Pharmacist in The Elkin Drug Co., N. W. cor. Van Buren and State sts., Chicago, Ill.
- MCCRILLES, JAMES E.—Pharmacist, corner Main and Fayette sts., Fayette, Ohio.

- MELCHER, ADOLPH B.—Pharmacist for Alfred Backdahl, 313 Washington ave., south, Minneapolis, Minn.
- MELVILLE, JAMES E.—Pharmacist in the firm of Melville Brothers, in wholesale and retail at Sandusky and at Lima, Ohio. Address at Sandusky, Ohio.
- MUMMERY, ARTHUR E.—Pharmacist, cor. Washington and Fourth ave., Ann Arbor, Mich.
- NORTH, SAMUEL J.—Formerly pharmacist with H. A. Blackmar, Charlotte, Mich. Some time chemist with James E. Davis & Co., Detroit. (?)
- PALMER, HENRY.—M. D. Univ. Mich. 1887. Registered pharmacist in Michigan. Physician, St. Johns, Mich.
- PARKER, CHARLES E.—In 1887-9 assistant chemist with Parke, Davis & Co., Detroit. Chemist and foreman of Seabury Pharmaceutical Laboratory, East Orange, Mass.
- PARKER, ROLAND J.—Pharmacist, Quenemo, Kansas. Member of Kansas Pharmaceutical Association.
- PETT, WILLARD F.—Pharmacist in the firm of A. M. Pett & Son, Winona, Minn.
- RANKE, WILLIAM F., JR.—Prescriptionist in the firm of Freese & Ranke, 88 Calhoun st., Fort Wayne, Ind. Member Indiana State Pharmaceutical Association.
- RICE, D. FRANK.—Pharmacist with Bodine & Schottlin, Fourth and Chestnut sts., Louisville, Ky.
- ROGERS, ARTHUR S.—M. D. Univ. Mich. 1890. From 1885 to 1887 pharmacist in charge at 524 Potter st., East Saginaw. Some time Assistant to the Professor of Pathology, Univ. of Mich.
- SMITH, ALBERT W.—B. S. Case School Applied Science 1887. Ph. D. Zurick 1891. Assistant Professor of Chemistry and Metallurgy in the Case School of Applied Science, Cleveland, O.
- SPENCER, HENRY H.—A. B. 1882. Pharmacist, Monroe, Mich.
- STABLER, LAIRD J.—B. S. Purdue Univ. 1890. In 1889 Instructor in Chemistry, Purdue University. Chemist to the Cornell Pheninger Chemical Co., manufacturers, Columbus, O. Graduate student in chemistry, Johns Hopkins Univ., Baltimore, 1890-91. Professor of Chemistry, University of Southern California, Los Angeles, Cal.
- STEINER, SAMUEL G.—Pharmacist at 910 Main street, Richmond, Ind.
- TUPPER, EDWARD A.—Pharmacist in the firm of Clark Bros. & Tupper, Jamestown, N. Y.

## 1886.

- ALCORN, GEORGE S.—Pharmacist and manufacturer of flavoring extracts, Columbia, Tenn.

- BANISTER, JOHN L.—For some time pharmacist with A. A. Schott & Co. (Ph. C. 1884), 503 Genesee ave., Saginaw E. S., Mich. Pharmacist in firm of J. L. Banister & Co., Saginaw E. S., Mich. Member of Michigan State Pharmaceutical Association.
- BOWDISH, JOHN L.—For some time pharmacist with A. M. Pett & Son, (W. F. Pett, Ph. C. 1885), Winona, Minn. Book-keeper Old Second National Bank, Aurora, Ill.
- BUCKHAM, ANDREW J.—Pharmacist, Flint, Mich.
- CLARK, EDWARD W.—Ph. G. New York College of Phar., 1884. Pharmacist some time at 24 East Main st., Amsterdam, N. Y. Address, at Ann Arbor, Mich.
- CONDON, WILLIAM D.—Hancock, L. S., Mich. Secretary and treasurer of Sturgeon River Lumber Co., Chassell, Mich.
- CONRADS, JOHN R.—Pharmacist with J. P. Jarman, Trenton, Mo.
- \*DANIELS, GEORGE BEAL.—Some time a pharmacist with Field & Gray, Alpena, Mich. Died at Gregory, Mich., Feb. 21, 1889.
- DOTY, JEPHTHA W.—Pharmacist in the firm of J. W. & W. P. Doty, Triangle Drug Store, Cass ave. and Clifford st., Doty's Pharmacy, 204 Warren ave., and Doty Bros., cor. Woodward and Willis aves., Detroit, Mich.
- DOTY, WIRT P.—Pharmacist. In above named firm. Cass ave. and Clifford st.
- EATON, HARVEY K.—Pharmacist with Geo. W. Sloan, Indianapolis, Ind.
- FELT, GEORGE H., JR.—Formerly pharmacist with Felt & Felt, Constantine, Mich. Now pharmacist in firm of West & Felt, 8 Canal st., Grand Rapids, Mich.
- HAIGH, CHARLES T.—Formerly chemist in charge of the laboratory of Smith, Hubbard & Co., manufacturing chemists. Now real estate and loan broker. Address, Decatur, Ill.
- HIRTH, PAUL H.—Commercial agent for John Wyeth & Bro., Philadelphia, Pa. Address, 101 Summit st., Toledo, Ohio.
- MEINERT, GERHARD.—Pharmacist, corner Adams and 12th sts., Toledo, Ohio.
- MILLER, THOMAS W.—Pharmacist with M. Miller, Warrensburg, Md.
- RUDDIMAN, EDSEL A.—Phar. M. Univ. Mich. 1887, M. D. Vanderbilt University, 1893. For some time chemist in charge of laboratory of Williamson, Ingram & Griggs, manufacturing pharmacists. In 1886-7 assistant in pharmacognosy in the University of Michigan: Adj. Professor in Pharmacy and Materia Medica, Vanderbilt University, Nashville, Tenn.
- RUNYAN, ELMER G.—For a time Clerk in the Surgeon General's office, Washington, D. C. In 1886-7 pharmacist for Dr. S. W. Hover, Weston, Mich. Assistant chemist at U. S. Dept. Agriculture, Washington, D. C.

- SCHERER, OTTO.—M. D. Detroit Coll. Med. 1890. In the study of medicine in the University of Heidelberg, Germany. In 1891, City Physician. Instructor of Physiology in Detroit College of Medicine. Address, 404 Jefferson ave., Detroit.
- SMITH, EDGAR D.—M. D. Rush Medical Chicago, 1891. For some time a chemist for the Chicago Rolling Mill Co., South Chicago, Ill. In 1885-6 assistant in the chemical laboratory of the University of Michigan. Instructor in Laryngology and Rhinology, Chicago Polyclinic. Physician and surgeon, 305 Division street, Chicago.
- STIVERS, EDWIN R.—Formerly pharmacist with Karl Simmons, St. Paul, Minn. Pharmacist in the firm of Lighthall & Stivers, Demersville, Montana.
- THOMPSON, MASON S.—Pharmacist with T. E. Sweetzer, Port Huron, Mich. (?)
- VEDDER, FRED F.—Pharmacist with S. A. Vedder, Carrollton, Ill.

### 1887.

- \*BAKER, CHARLES.—Pharmacist with C. P. Parkhill & Sons (S. E. Parkhill, Ph. C. 1887), Owosso, Mich. Died March 23, 1892.
- BARIE, HERMAN L.—Member Detroit and Mich. State Phar. Associations. Address 535 Macomb street, Detroit, Mich. Member of firm of W. H. Stone, Ph., B. & H. L. Barie, Ph. C., Analytical Chemists, and manager of Mitchell's Pharmacy, Detroit, Mich.
- BAUMHARDT, ADAM J.—M. D. 1895. Pharmacist and Analytical Chemist. Chemist for the City of Hutchinson, Professor of chemistry and botany, Kansas Normal University, Hutchinson, Kansas, until 1893, Physician and surgeon, Lorain, Ohio.
- BEAL, EMERY R.—Pharmacist with Field & Gray, Alpena, Mich.
- CARR, LOUIS B.—Pharmacist with Geo. E. Taylor, 414 Harrison ave., Leadville, Colorado.
- CROMAN, JOSEPH M.—Pharmacist in the firm of Croman & Zahn, 291 Woodward ave., Detroit, Mich.
- \*DOEHNE, WILLIAM HENRY.—In 1887-8 instructor in pharmacy in the School of Pharmacy in Purdue University, La Fayette, Ind. Died in 1888.
- DOTHANY, WILLIAM A.—B. S. Mich. State Agr. Coll. 1884. Assistant in chemical laboratory of Agricultural College, 1885. Pharmacist and sole owner of West Side Electric Light plant, Detroit, Mich.
- DRYFOOS, LOUIS A.—Ph. D. Zurich 1891. Dissertation on "Piazine Derivations."
- DUPONT, RICHARD S.—Pharmacist with Parke, Davis & Co., Detroit, Mich. Address 211 Howard street, Detroit, Mich.

- ELLIS, LEROY A.—Pharmacist with L. T. Gackenhimer, Van Wert, Ohio.
- HANCE, SAMUEL S.—Pharmacist, 72 12th street and 345 Trumbull ave., cor. Locust, Detroit, Mich.
- HENDERSHOTT, FLORENCE EDITH.—MRS. FRED J. HENNING, Dec. 19, 1889.—Some time in pharmacy in Manistee, Mich. Address 691 Third ave., Detroit.
- HENNING, FRED J.—Pharmacist 691 Third ave., Detroit, Mich.
- JACKMAN, WILBUR F.—B. S. Univ. Mich. 1886. Pharmacist, corner of Michigan ave. and Fifth st., Detroit, Mich., until 1895. Professor of Pharmacy in Maine State College, Orono, Me.
- JONES, MERVIN A.—Formerly pharmacist in charge for Griswold & McGregor, Big Rapids, Mich. Pharmacist with Alsdorf & Son, 909 Jerome st., Lansing.
- \*KRAUSE, BENJAMIN S.—Pharmacist with James A. Taylor, corner Third and Howard streets, Detroit, Mich. Died Dec. 15th, 1890, at Ann Arbor, Mich.
- LEISENRING, WILLIS.—B. S., Mich. Agr. Coll. 1894. Pharmacist with C. H. Wagener, Big Rapids, Mich. Now at Marquette, Mich. (?)
- \*MARSHALL, EDWARD HALL.—Died Nov. 9, 1887, at Indianapolis, Ind. Had been engaged with Geo. W. Sloan & Co., pharmacist, Indianapolis.
- MITCHELL, ANDREW S.—Analytical chemist. Professor of Chemistry in the Milwaukee Medical College, State Chemist in Wisconsin. Address 436 Milwaukee st., Milwaukee, Wis.
- REULE, GUSTAVE A.—Pharmacist in charge for A. J. Baumhardt, (Ph. C. 1887), Hutchinson, Kansas.
- SCHLOTTERBECK, JULIUS O.—B. S. (Chem.) 1891. In the Faculty of this School of Pharmacy, having charge of pharmacognosy, materia medica and the micro-botany of the pharmaceutical classes. With leave of absence for study in Europe in 1895-96.
- SCHUBEL, CHARLES G.—Formerly pharmacist with Milburn & Williamson, Woodward ave., Detroit. Address 210 Wash. ave., North Lansing, Mich.
- SHULER, DARIUS P.—B. S. (Chem.) 1891.—Teacher of chemistry in the City High School, at Ypsilanti, Mich. in 1888-9. Chemist Canadian Copper Co., Copper Cliff, Ont.
- STANDART, CLAYTON J.—In charge of H. P. Hayes' Pharmacy, 312 Elk st., Buffalo, N. Y.
- TOPPING, GEEORGE B.—Manufacturing pharmacist in charge of the laboratory of Orr, Brown & Price, wholesale druggists, Columbus, Ohio. Address 258 E. Gay st.

- VAN ZWALUWENBURG, A.—Assistant in pharmacognosy and pharmacy in the University of Michigan in 1887–8. Chemist for the St. Louis Ore and Steel Co., South St. Louis, Mo. Consulting Chemist, 532 Rialto Bldg., Kansas City, Mo.
- WARREN, WILLARD McK.—Pharmacist, 1859 West Colfax ave., Denver, Colorado.
- \*WILEY, CHARLES DELOS.—Died May 2, 1888, at Lansing, Mich. Had been engaged in pharmacy in Lansing.

## 1888.

- ALLEN, CHALMERS P.—Pharmacist, West Bay City, Mich.
- ALLISON, CHARLES W.—Pharmacist, Lennan, Mich.
- BOETCHER, CHARLES V.—Chemist with Orr, Brown & Price, Columbus, Ohio.
- \*EBERBACH, WILLIAM F.—Pharmacist with Eberbach & Son, Ann Arbor, Mich. Died Jan. 24, 1894.
- EWELL, ERVIN E.—Assistant in Qualitative Analysis, University of Michigan, 1888–90. Assistant Chemist U. S. Agricultural Department, 2227 Fifteenth st. N. W., Washington, D. C.
- HAWKS, RICHARD E.—Pharmacist at 727 S. Eleventh st., Lincoln, Neb.
- HORINE, DORSEY P.—Formerly pharmacist with W. C. Scupham, 63 State st., Chicago, Ill. Pharmacist with C. Kotzenberg, 4203 S. Halstead st., Chicago. At Michael Reese Hospital, Chicago.
- KIDDER, SAMUEL, JR.—Formerly pharmacist with E. E. Scholtz, Denver, Col. Now assayer and chemist, Portland Gold Mining Co., Cripple Creek, Col.
- LEVY, HENRY.—Secretary of The Baker-Levy Chemical Co., 213-215 State st., Chicago, Ill.
- OECHSLER, ALBERT.—Resident graduate in 1888–9. Chemist for iron and steel, with National Refining and Smelting Co., So. Chicago, Ill.
- PASSOLT, HERMAN A.—In post graduate chemical studies, University of Michigan, 1888–9. Analytical chemist for Biwabik Ore Co., Biwabik, Minn.
- PENNINGTON, JOHN E.—Formerly pharmacist. Now traveling salesman for Reed & Carnrick, 124 and 126 S. Fifth ave.
- RAYNALE, FRANK B.—Pharmacist, Lansing, Mich.
- RUSE, ANDREW E.—Pharmacist, Humbolt, Iowa.
- SHAPER, JOHN H.—M. D. Univ. Mich. 1891. Instructor in Pharmacy in Purdue University, Lafayette, Ind., in 1888–9. Physician, 618 Madison st., Toledo, Ohio.



- SMITH, MARIE R.—For some time in pharmacy and in hospital service, Chicago. Student in Hahnemann Medical College, Chicago, Ill. Address, 452 Thirty-fifth st.
- SOETJE, EDWARD.—In pharmacy, Monticello, Iowa. Now at Anamosa, Iowa.
- WARE, EZRA J.—Pharmacist, Ware's Pharmacy, 565 Cherry st., Grand Rapids, Mich.
- WATERMAN, CHAUNCEY N.—Formerly chemist for the Riverside Chemical Works, 489 Kent ave., Brooklyn, N. Y., and chemist for New York Dye Wood Extract and Chemical Co. Office 55 Beekman st., New York. Now analytical chemist, Room 65, 620 Atlantic ave., Boston, Mass.
- WESENER, JOHN A.—Professor of Chemistry and Toxicology of the Chicago Post Graduate Medical School, 58 Third ave., Chicago.
- WHINERY, JOSEPH B.—Some time chemist with Meyer Bros., wholesale pharmacists, St. Louis, Mo. Dept. Med. and Surg., University of Michigan. M. D., Grand Rapids.
- WISEMAN, FRANK D.—Pharmacist with A. Bakhaus, 23 E. Main st., Springfield, Ohio.
- ZWICK, KARL G.—Licentiate by examination in pharmacy in Ohio in 1888, and in Kentucky in same year. In chemical studies in Wiesbaden, Germany. Manager of G. A. Zwick's Pharmacy, Eleventh st. and Madison ave., Covington, Ky.

## 1889.

- ABBEY, CHARLES C.—Pharmacist, Redlands, California.
- ALLSHOUSE, HARRY A.—Pharmacist in the company of H. A. & G. M. Allshouse, 207 Broadway, Hannibal, Mo.
- ALLWORTH, JAMES E.—Formerly chemist at the Medical and Surgical Sanitarium, Battle Creek, Mich. Now traveling salesman for H. J. Milburn & Co., Detroit, Mich.
- BARRY, BENJAMIN T.—Pharmacist in the company of Ruhl & Barry, Houghton, Mich.
- BLOCK, LEO P.—With Block & Co., wholesale druggists, Chattanooga, Tenn.
- BODEN, EDWIN T.—Pharmacist, 512 Midland st., West Bay City, Mich.
- BOWEN, THOMAS W.—Chemist of Elkhorn Mining Co., Idaho City, Idaho.
- CHAMBERLAIN, FRED J.—Pharmacist, in the company of F. J. Chamberlain & Bro., 53 West Main st., Battle Creek, Mich.
- CHURCH, STARR K.—M. D. Univ. Mich., 1892, Some time Pharmacist with C. M. LaRue, West Bay City, Mich. Physician Raymond, Cal.

- CROWLEY, CHARLES F.—Some time Manufacturing Pharmacist with Parke, Davis & Co., Detroit, Mich. Professor of Chemistry in Creighton Medical College.
- DUNN, WILLIAM L.—M. D., 1891. B. S., 1894. Assistant to the professor of Surgery, Univ. Mich. Now Assistant Physician and Chemist in the Winyah Sanitarium, Asheville. N. C.
- EMANUEL, JULIA E.—Prescriptionist, Meyer Bro. & Co., Fort Wayne, Ind.
- FLINT, MERRILL S.—Formerly Pharmacist in charge of the drug department of the Chateauquay Ore and Iron Co., Lyon Mountain, N. Y. With the Racquette River Paper Co., Potsdam, N. Y.
- \*FRANZ, HENRY S.—Formerly with James R. Hofflin & Co., Minneapolis, Minn. Pharmacists in the firm of M. H. Andrews & Co., North Vernon, Ind. Died April 10, 1893.
- FROST, HENRY J.—Formerly Pharmacist, 208 S. Washington ave., Saginaw, E. S., Mich. In Department of Medicine and Surgery, Univ. Mich.
- GRIFFIN, TRUMAN.—Pharmacist in the firm of Hofflin Thompson Drug Co., 101 Washington ave. South, Minneapolis, Minn.
- HEATH, ROLLA M.—In Pharmacy with Gale & Blocki, 34 Washington st., Chicago, Ill.
- HESSE, BERNHARD C.—B. S., Univ. Mich., 1893. Some time Pharmacist with Prall & Jones, East Saginaw, Mich. Assistant in Qualitative Analysis in Univ. Mich., 1890-93. Fellow in Chemistry, University of Chicago, Chicago, Ill.
- HIRTH, GEORGE J. JR.—M. D. 1891. C. M., Univ. of Berlin, '92. Physician, No. 66 Farned ave., Milwaukee, Wis. Professor of Histology and Lecturer on Principles of Surgery and Assistant to Chair of Surgery of the Milwaukee Medical College and School of Dentistry.
- JANNEY, RUSSELL L.—Pharmacist. Eagle Pharmacy, Paso Robles, San Luis, Obispo Co., Cal.
- JENTER, CHRISTIAN G.—Resident Graduate in Metallurgical Chemistry, 1889-90. Assistant in Quantitative Analysis, Univ. Mich., 1890-91. Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y.
- JOHNSON, BURT L.—Pharmacist for W. H. Severance, Middleville, Mich.
- KEITH, FRANKLIN R.—Pharmacist, 501 W. 10th st., Topeka, Kansas.
- KIRCHGESSNER, WILLIAM C.—Pharmacist with Peck Bros., Monroe st., Grand Rapids, Mich.
- KRAMER, LEONARD G.—Pharmacist, Chesterton, Ind.

- KRUG, WILLIAM H.—Assistant Chemist in Chemical Division of the U. S. Department of Agriculture, Washington, D. C.
- LOCKWOOD, WILLIAM S.—Some time in Pharmacy. Now Grocer in firm of Collins & Lockwood, Coldwater, Mich.
- MEHLHOPP, FRED W.—Manager and Treasurer of the Ozone Company, New York and Chicago. Address 1115 Masonic Temple, Chicago, Ill.
- PARKINSON, FERDINAND E.—Pharmacist in the firm of Parkinson & Parkinson, Saginaw, W. S., Mich.
- \*ROCKWELL, MARK.—M. D., 1891., Assistant Physician of Northern Michigan Asylum, Traverse City, Mich., 1891-93. Physician and Surgeon, Room 344 Jones and Summer Block, corner Main and Pipestone sts., Benton Harbor, Mich. Died, April 22, 1894.
- ROWLAND, CHARLES W.—Pharmacist, 23 South Main st., Oberlin, Ohio.
- SCHETTLER, GEORGE M.—Pharmacist. Successor of A. E. Holt corner Fort and Cass sts., Detroit, Mich.
- SMITH, OSCAR J.—Manufacturing chemist with the Stewart & Holmes Drug Co., Seattle, Washington.
- SPENKER, LOUIS J.—Formerly manufacturing pharmacist with the Wolle Chemical Co., Toledo, Ohio. Now in insurance in firm of Koschland & Spencer, Room 3 Nasby Building. Address, 356 South Erie st., Toledo, O.
- THOMPSON, JOHN.—Formerly with Myron Calkins, Clinton, Mich. Pharmacist in the firm of S. Van Etta & Son, Hudson, Mich.
- VAN ETTA, HARRY S.—Pharmacist in the firm of Van Etta & Crandall, Burr Oak, Mich.
- VOGEL, ALBERT F.—Pharmacist with Jas. R. Hoffin & Co., Minneapolis, Minn., until 1892. Address Chelsea, Mich.
- WEIGHTMAN, MATTHEW, JR.—Pharmacist 833 Kansas ave., Topeka, Kansas. Secretary of Topeka Drug Association.
- WHEELOCK, WILLIAM C.—Manager of East End Drug Store of Colwell Bros., 1324 East Main st., Jackson, Mich.
- WOOD, JOSEPH B.—For some years a pharmacist. Some time in chemical studies in the Department of Literature, Science, and the Arts, University of Michigan. Address, 684 Fourteenth ave., Detroit, Mich.
- ZEIG, AUGUST C.—Manufacturing chemist in the pharmaceutical laboratory of Clinton E. Worden & Co., 214-220 Townsend st., San Francisco, Cal.

**1890.**

- ARMSTRONG, ROBERT B.—M. D. 1894. Some time assistant chemist at New York State Agricultural Experiment Station, Geneva, N. Y. Assistant in Pharmacy, University of Michigan, 1891-92. Physician.

- BAERT, GEORGE H.—M. D. Univ. Penn., 1893. Instructor in Chemistry at Purdue University School of Pharmacy in 1890-91. Physician, 147 Monroe st., Grand Rapids, Mich.
- BAKER, CHARLES W.—Pharmacist in the firm of George R. Baker & Son, 205 South Main st., Mt. Vernon, Ohio.; also pursuing studies in Kenyon College, O. Address, 500 East High st., Mt. Vernon, O.
- BAKER, FRED W.—Pharmacist with A. E. Holt, 313 Woodward ave., Detroit, Mich.
- BOYCE, SAMUEL R.—Assistant Professor of Pharmacy at Kansas State University, Lawrence, Kan. In graduate studies, Univ. Mich. 1893-4.
- COLLINS, WILLIAM E.—Pharmacist in the company of Will E. Collins & Co., 115 North Washington st., Owosso, Mich.
- HAWES, GEORGE S.—Pharmacist in the firm of Hawes & Godfrey, Parma, Mich.
- \*HOLLIS, CHARLES WILLIAM.—Entered Department of Medicine and Surgery, University of Michigan, October, 1890. Died in March, 1891.
- HUBER, LOUIS H.—Pharmacist with H. Huber, M. D., Ottawa, O.
- ILHARDT, WILLIAM K.—Ph. G., St. Louis Coll. Phar., 1888. Pharmacist, 2732 South Thirteenth, corner Lynch st. Demonstrator in Microscopy, St. Louis College of Pharmacy.
- JARMAN, ERNEST M.—Pharmacist with The Tooth Theatre Pharmacy, corner Fifth and Francis sts., St. Joseph, Mo.
- KEBLER, LYMAN F.—B. S., Chem., Univ. Mich., 1891; M. S., 1892. Assistant in Qualitative Chemistry, University of Michigan. Analytical and manufacturing chemist with Smith, Klein & French Co., Philadelphia, Pa.
- KIRBY, MAURICE S.—Wholesale dealer in fish, Grand Haven, Mich.
- KIRBY, THOMAS E.—Some time in pharmacy with H. J. Milburn & Co., Detroit, Mich. In the firm of T. W. Kirby & Sons, wholesale and retail coal dealers, Grand Haven, Mich.
- KLINGMAN, THEOPHIL.—M. D. Univ. Mich. 1892. Physician, 704 North Front st., corner Sixth st., Bay City, Mich. Member of the Michigan State Pharmaceutical Association.
- \*LEVY, MORITZ M.—Some time a pharmacist at Charlotte, Mich. Died June 2, 1891.
- MARTZLOFF, CHARLES E.—Pharmacist; manager of Darlington's Pharmacy. 181 William st., Buffalo, N. Y.
- MCGUIRE, BEN J.—Pharmacist with Nelson Mallett, Trenton, Mo.
- MEYER, OTTO P.—Manufacturing and analytical chemist in charge of the laboratory of Meyer Bros. Drug Co., importers and wholesale druggists, Broadway, Clark ave. and Fourth st., St. Louis, Mo. Member of the St. Louis Club of Microscopists.

- MILNER, THOMAS J.—Pharmacist, Big Rapids, Mich. In graduate studies Univ. Mich., 1894-95.
- NIERMANN, HERMAN G.—M. D. Univ. Mich. 1892. (?)
- PALMER, WALLACE.—Pharmacist with F. W. R. Perry (Ph. C. 1880), Detroit, Mich.
- PURTSCHER, CHRISTIAN.—Pharmacist with Frank Inglis, corner Griswold and State sts., Detroit, Mich.
- SCHUERMAN, WILL M.—Pharmacist with C. E. Spayd, 502 Monroe st., Toledo, O.
- SCHMID, OSCAR F.—Ph. B. 1889. Some time assistant chemist of Iron and Steel Works at Joliet, Ill. In the firm of The Weeks Drug and Chemical Co., manufacturing pharmacists, Jackson, Mich.
- SHERRARD, CHARLES C.—Analytical chemist for Frederick Stearns & Co., manufacturing pharmacists, Detroit, Mich.
- THAYER, HENRY A.—Pharmacist with J. L. Thayer, Sherman, N. Y.
- TIBBALLS, WILLIAM J.—Some time assistant chemist at New York Agricultural Experimental Station, Geneva, N. Y. Graduate student in chemistry at University of Michigan, 1891-92. City chemist for Board of Health, Detroit, Mich. Address, 72 Lafayette ave.
- WAIT, CORA L.—Formerly dispensing pharmacist in Northern Michigan Insane Asylum. Pharmacist with S. E. Wait, Traverse City, Mich.
- \*WESTFALL, DEAN M.—Some time in pharmacy with C. D. Woodworth, Ellensburg, Wash. Died Nov. 10, 1892.
- WISE, CLARENCE H.—Pharmacist in the company of C. A. Wise & Sons, wholesale and retail druggists, Cedar Falls, Ia.
- WOOD, HOMER R.—Formerly Pharmacist with Dr. J. N. McCandless, Prescott, Arizona. Now Deputy County Treasurer of Yavapai County, Arizona.
- YOUNG, ROY D.—Phar. M., Univ. Mich., 1892. B. S. Harvard, 1894. Assistant Chemist at New York State Agricultural Experiment Station, Geneva, New York, in 1890-91. Assistant in Pharmacy, Univ. Mich. '92-'93. Address, Belleville, New York.

## 1891.

- ADAMS, ARTHUR W.—Some time in Pharmacy with Hall & Hilton, Bay City, Mich. Chemist with Clinton Pharmaceutical Co., 132 Holland st., Syracuse, New York.
- ANDO, SHINICHI.—Some time assistant chemist at New York State Agricultural Experiment Station, Geneva, New York. Chemist of Apollo Iron and Steel Co., Apollo, Pa.
- ASHLEY, WILLIAM F.—Pharmacist. Grafton, Ohio.
- BERRY, ROBERT M.—Huntington. Ind.

- BIRD, HARRY L.—Pharmacist. Hotel Benton Block. Benton Harbor, Mich.
- BRIGGS, PERRY.—Apothecary to the University Hospital, Ann Arbor, Mich.
- BURGESS, HOMER.—Pharmacist. Central Dispensing and Emergency Hospital, Washington, D. C. Address, 1132 10th st., N. W.
- CAMPBELL, ARTHUR. Manager of the Pharmacy of Campbell & Son, Crystal Falls, Mich.
- CHURCHILL, ALFRED P.—With S. P. Churchill, Pharmacist, 36 Euclid ave., Cleveland, Ohio.
- CORBIN, JOHN W.—Graduate student in Metallurgical Chemistry, Univ. Mich., 1891-92. 1893-94, Chemist Illinois Steel Co., South Chicago and Joliet, Ill. Teacher, Linwood, Ark.
- DAVIS, FRANK F.—Pharmacist, corner of Eleventh and U sts., Northwest, Washington, D. C. Assistant in Pharmacy at the Howard University. Chemist for the Alpha Life Insurance Company.
- GREAVES, EDITH E.—MRS. EDGAR A. WHITE.—Port Huron, Mich. Teacher of chemistry in Port Huron High School, 1892-4.
- GREEN, FRANK A.—D.D. S., Chicago Dental College. Green Bros., Dentists, 218 Main st., Ashtabula, Ohio.
- GRIES, JOSEPH M.—Pharmacist in the firm of Gries Bros., corner 2nd South and State sts., Salt Lake City, Utah. Also 3d South and Main sts.
- HEARNE, JOSEPH C.—Pharmacist, in firm of Stamper & Hearne, 49 East Short st., Lexington, Ky.
- HITCHCOCK, JOHN E.—Pharmacist, in "Medical Hall," Plattsburg, New York.
- HUBBARD, JOHN L.—In the firm of Clark & Hubbard, Pharmacists, Grass Lake, Mich.
- HUESTED, FRANK P.—Instructor in Pharmacy in the Albany College of Pharmacy. For some time Chemist for the New York State Board of Health, Albany, New York. Assistant in Natural Science in Albany High School, and in full charge of courses in Chemistry and Botany.
- KAHN, HARRY.—Ph.G., Illinois College of Pharmacy, 1889. Phar. M., Univ. Mich.\* Some time Assistant in Pharmacy in the Illinois College of Pharmacy, Chicago, Ill. (?)
- KENNEDY, EDWARD M.—Pharmacist with George McDonald, Kalamazoo, Mich.
- KING, JOSEPH C.—Firm of Brewster & King, Lake Placid, New York. Address, Ithaca, New York.

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\*Ph.G., July 25, 1889: Phar. M., June 25, 1891. Has not received the degree of Ph.C.

- LOUDENBECK, HARRY C.—Chemist for the Griffin Wheel and Foundry Co., 908 Warren ave., Chicago, Ill.
- McGEE, THOMAS H.—Lansing, Mich. (?)
- MURRAY, BENJAMIN L.—Assistant Chemist in the New York State Agricultural Experiment Station, Geneva, New York, 1891-4. Graduate student in chemistry, Univ. Mich.
- PECK, FRANK S.—Graduate student in Metallurgical Chemistry in the University of Michigan until April, 1892. Chemist in company of H. L. Hollis & Co., Analytical Chemists and Mining Engineers, 804 Perry-Payne Building, Cleveland, Ohio.
- RUSSELL, DORIAN M.—Prescriptionist with Thum Bros. & Schmidt, 84 Canal st., Grand Rapids, Mich. Chairman, Committee on Papers, Mich. State Phar. Assoc.
- SCHMIDT, WALTER K.—Proprietor in the Thum Brothers & Schmidt, Pharmacy, 84 Canal st., Grand Rapids, Mich.
- SHEPHERD, FRANK I.—Some time Assistant Chemist with the William S. Merrill Chemical Co., manufacturers, Cincinnati, Ohio. Student in Leland Stanford, Jr., University, 1892-95. Address Stanford University, California.
- SMITH, HENRY F.—Pharmacist. Proprietor of the Gem Pharmacy, Oberlin, Ohio.
- SNOW, HENRY P.—Prescriptionist with William H. Quinn, Ballston Spa., New York.
- VAN SCHOONHOVEN, GARRIE G.—Pharmacist with the Smith Drug Co., cor. Main and 2d sts., Salt Lake City, Utah.
- WHITNEY, JAMES W.—Pharmacist with I. P. Fitchett, 400 Broadway, Saratoga Springs, New York.

## 1892.

- ALLEN, HARRIS E.—B. S., Fayette College. Pharmacist with Wilson & Lee, Morenci, Mich.
- ATWOOD, DANIEL W.—56 Vine st., Zanesville, Ohio.
- BIRKMIER, HARRY W.—Pharmacist with J. W. Reed's Son, 247 Summit st., Toledo, Ohio.
- CADY, WALTER B.—Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, New York.
- CARSSOW, RUDOLPH B.—Chemist in Laboratory of Allen & Pfeiffer Manufacturing Co., 619 North Main st., St. Louis, Mo.
- CODY, BERT E.—Chemist with the Natural Gas Co. Address, box 159 North Indianapolis, Ind.
- COOK, AMOSA D.—Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, New York.
- DRAKE, FRED T.—Pharmacist with Reed Bros., Argos, Ind.

- FISCHER, RICHARD.—B.S. Chem. 1894. Some time assisstant in Qualitative Analysis, Univ. Mich. Instructor in Pharmacy in the University of Wisconsin.
- HAAG, ELLIOTT H.—Pharmacist in the company of E. H. Hagg & Co., 601 Monroe st., Toledo, Ohio.
- HEARD, MARY K.—Teacher of chemistry in Manistee, Mich., 1892-4. In graduate chemical studies, Univ. Mich., 1894-5. Northeast, Pa.
- HOWER, PHIL G.—Pharmaceutical Chemist in firm of Hower & Rose, 25 Broad st., Elyria, Ohio.
- JACKSON, GEORGE, R.—A.B., Oberlin College. Pharmacist. 111½ Braler st., Memphis, Tenn., until September, 1894. Professor of Chemistry in Collegiate Department of St. Augustine School.
- KELLY, WM. A.—Pharmacist with W. W. Kelly, Ottawa, Ohio.
- KLEIN, JULIUS M.—Pharmacist, Albion, Mich.
- LANDERS, ALFREDE E.—Pharmacist with F. H. Edmonds. Fredonia, N. Y.
- LOHRSTORFER, JOSEPH.—Pharmacist with F. E. Sweetser, cor. Military and Water sts., Port Huron, Mich.
- MILLER, EMERSON R.—Phar. M., 1893. B. S. Chem. Univ. Mich., 1894; M. S., 1895. Assistant Professor of Pharmacy Alabama Polytechnic Institute, Auburn, Ala.
- PARSONS, JAMES H.—Treasurer and General Manager of Parsons & Pattison Chemical Co., 912 Masonic Temple, Chicago, Ill., and 305 Pennsylvania ave., Detroit, Mich. Laboratory, Chicago, Ill. Address. Detroit.
- PATTISON, GEORGE H.—Chemist with Charles B. Baker, & Son, in 1892-94. Analytical and Manufacturing Chemist. Address, 7841 Eggleston ave., (Station P.) Chicago. Member American Pharmaceutical Association.
- PUSCH, OSCAR C.—Some time Pharmacist with L. Wilson, 139 South 10th st., Lincoln, Neb. With C. F. Pusch, Maysville, Kan.
- ROBINSON, THOMAS E.—Pharmacist at Lansing, Mich. (?)
- SANFORD, WILLIAM E.—Professor of Pharmacy, University of Illinois, Champaigne, Ill.
- SELTZER, LEONARD A.—In 1892-95 Pharmacist with F. W. R. Perry, (Ph.C., 1880). Chemist with Parke, Davis & Co., Detroit, Mich.
- SHEEDY, JOHN T.—Some time Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, New York. Pharmacist, Worcester, Mass.
- SOETJE, OSCAR H.—Pharmacist in the company of Tiarks & Soetje, Monticello, Iowa.



SUTTON, JOHN B.—Pharmacist. Manager for Dr. Ronga, 137 Ewing st., Chicago, Ill.

WARNER, GEORGE J.—Birmingham, Mich.

WELLS, JOSEPH J.—Pharmacist in the firm of J. E. Wells & Son, Athens, Mich. Teaching General Chemistry in High School.

### 1893.

BENTON, LOU NEWTON.—Pharmacist with Sanders & Shirer, Aurora, Ill.

CHAPEL, FRED NEWTON.—Pharmacist, Charlevoix, Mich.

COLEMAN, SHELDON.—Pharmacist with Gillis & Hamilton, Lawton, Van Buren Co., Mich.

DAVOLL, DAVID LAKE, JR.—Assistant in Qualitative Analysis, and graduate student in chemistry University of Michigan. Assistant chemist in the research laboratory of Parke, Davis & Co., Detroit, Mich.

FABER, FRED.—Pharmacist in the firm of Faber Bros., 2165 Ashland ave., Toledo, Ohio.

FROMM, JOHN DAVID.—Manager of Yavapai Pharmacy, Prescott, Arizona.

GEDDES, LILLIAN MISSOURI.—Graduate student in chemistry, Univ. Mich.

GRAHAM, ABNER R.—Pharmacist in the firm of Graham & Wilson.

HAVENHILL, L. D.—Phar. M., 1894. Assistant in Pharmacy and Pharmacognosy, University of Michigan, 1893-94. Analytical chemist with Dr. A. B. Lyon, Honolulu, H. I.

HILL, CHARLES OTIS.—A. B. University of Tennessee. Pharmacist with Citizens Drug Store, 200 Central ave., Knoxville, Tenn. Address, 1008 Rose ave.

HOUGHTON, ELIJAH MARK.—M. D., Univ. Mich., 1884. Assistant in Pharmacology, Univ. Mich. Pharmacologist in the laboratory of Parke, Davis & Co., Detroit, Mich.

JACKSON, CHARLES ELSWORTH.—Chemist with W. S. Merrill & Co., 136 Broadway, Cincinnati, Ohio. Address, Canal Fulton, Ohio.

MERKEL, CHARLES W.—Pharmacist, Wm. Owen & Co., Muscogee, Ind. Ter.

MORRIS, GEORGE ALEXANDER.—Pharmacist with Parkinson & Parkinson, Saginaw W. S., Mich.

NEWTON, WELLES BLACKWOOD.—Pharmacist with T. B. Huston, 1833 Adams st, Toledo, O.

NICKERSON, FREDERICK HOLLAND.—Pharmacist with F. B. Nickerson, Greenwich, Ohio.

PIERCE, BESSIE GILLESPIE.—Teaching, West Bay City, Mich.

- RUDOLPH, KARL EDWIN.—Pharmacist for George Lotze & Sons, Gerard, Ohio.
- SCHIERER, WILLIAM.—Pharmacist at 349 Hudson ave., Rochester, N. Y.
- SMITH, CARL EDWARD.—Analytical chemist with Edward R. Squibb & Sons, Brooklyn, N. Y. Address, 36 Doughty st.
- WAGNER, GEORGE.—Instructor in Botany and Pharmacognosy, School of Pharmacy, Northwestern University. Until December, 1893, Manager at Morgan, Minn.
- WERTZ, SILAS GRANT.—Studying medicine, Jefferson Med. Col.

## 1894.

- ARMSTRONG, RANSOM S.—Pharmacist with R. S. Armstrong (father), Chelsea, Mich.
- BARNHART, CLARENCE E.—Pharmacist with Ryan Drug Co., retail department, 1321 S. Adams st., Peoria, Ill.
- EPLEY, ARTHUR W.—Chemist with Atlantic Refining Co. (Eclipse Lubricating Oil Works), Franklin, Pa.
- FARNUM, LOVELL.—Pharmacist in the firm of Davis & Farnum, Glendive, Montana.
- GROCHAN, EDWARD A.—Pharmacist with F. W. Kubler & Co., 127 E. Superior st., Duluth, Minn. Address, 223 E. Second st.
- HUDSON, HARRY H.—Pharmacist, Peoria, Ill.
- JONES, JOHN H.—Pharmacist, corner Sharp and Montgomery sts., Baltimore, Md.
- KNOX, SAMUEL R.—Pharmacist in the firm of Boyd & Knox, Paoli, Ind.
- MCGREGOR, JAMES C.—Pharmacist with W. H. Burke (Ph.C. 1884), 291 Woodward ave., Detroit, Mich.
- MCNOAH, GRACE E.—Graduate student in chemistry, Univ. Mich.
- MEAD, ALLEN H.—Pharmacist with J. Adams Smith, 69 Woodland ave., Cleveland, Ohio.
- MURDOCK, THOMAS E.—Pharmacist with H. F. Wyatt & Co., 4 Winter st., Adrian, Mich.
- NICHOLS, MARION F.—Pharmacist with B. Schröder & Co., Hill Drug Store, Grand Rapids, Mich.
- O'CONNOR, DELIA—Ann Arbor, Mich.
- ROBERTSON, FRED LYLE.—Manager of M. G. Tobey's Drug Store, 42 Highland st., Amesbury, Mass.
- SEYMOUR, JAMES.—Assistant in Qualitative Analysis, Univ. Mich.
- STEVENTON, GEORGE C.—Graduate student in Chemistry, Univ. Mich.

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TEGARDEN, JOHN L.—Chemist with F. Stearns & Co., Detroit, Mich.

TOPPING, CHARLES O.—Chemist with Edward R. Squibb & Sons, 36 Donghty st., Brooklyn.

WILLIAMS, CHARLES H.—Ph.B.. Adrian College. In study of medicine, Univ. Mich. Appointed for the classes in Pharmacognosy, Univ, Mich., 1895-6.

WISE, PARKE E.—Pharmacist in the firm of C. A. Wise & Sons, Wholesale and Retail Druggists. Cedar Falls, Iowa.

# Index to Name of Graduates.

WITH YEAR OF GRADUATION.

Abbey, C. C.	'89	Bodeman, F. E.	'73
Adams, A. W.	'71	Boden, E. T.	'80
Adams, Arthur W.	'91	Boehme, C. A.	'78
Alcorn, G. S.	'86	Boetcher, C. V.	'89
Adler, S. W.	'83	Boise, E. P.	'62
Allen, C. P.	'88	Boughton, E. G.	'76
Allen, Harris E.	'92	Bowdish, G. A.	'89
Allen, J. A.	'81	Bowen, R. F.	'79
Allen, S. E.	'76	Bowen, T. W.	'89
Allison, C. W.	'88	Bower, F. T.	'76
Allmand, C. W.	'84	Boyce, S. R.	'90
Allmendinger, C. G.	'82	Boyd, J. P.	'73
Allshouse, H. A.	'89	Braddock, O. L.	'71
Allworth, J. E.	'89	Briggs, Perry.	'91
Amerman, A. S.	'71	Brockmeier, J. H.	'82
Ames, J. H.	'76	Brooks, F. A.	'78
Ando, Shinichi.	'91	Brown, J. G.	'73
Armstrong, I. A.	'79	Buchanan, W. A.	'70
Armstrong, R. B.	'90	Buckham A. J.	'86
Armstrong, R. S.	'94	Buckham, J. N.	'76
Arnold, C. F.	'69	Burgess, Homer.	'91
Ashley, William F.	'91	Burke, W. H.	'84
Atwood, Daniel W.	'92	Burnett, C. J.	'72
Avery, J. H.	'77	Burroughs, C. S.	'76
Ayres, J. N.	'79	Burt, J. C.	'75
Babbitt, E. T.	'83	Cady, Walter B.	'92
Baert, G. H.	'90	Calkins, E. E.	'84
Bailey, F. C.	'81	Calkins, H. W.	'78
Baird, J. W.	'83	Campbell, Arthur.	'91
Baker, C.	'87	Campbell, W. G.	'79
Baker, C. W.	'90	Carey, W. S.	'71
Baker, F. W.	'90	Carley, G. L.	'82
Banister, J. L.	'86	Carr, L. B.	'87
Bancroft, R. B.	'81	Carssow, Rudolph B.	'92
Barie, H. L.	'87	Cary, J. C. W.	'70
Barnhart, C. E.	'94	Case, E. T.	'84
Barnabee, H. S.	'83	Case, M. T.	'69
Barry, B. T.	'89	Case, T. G.	'70
Bassett, E. C.	'83	Chamberlin, F. J.	'89
Baum, C. M.	'75	Chapel, Fred Newton.	'93
Baumhardt, A. J.	'87	Church, S. K.	'89
Beach, L. F.	'76	Church, W. D.	'79
Beal, E. R.	'87	Churchill, Alfred P.	'91
Becker, C. L.	'81	Churchill, O. L.	'76
Benton, Lou Newton.	'93	Cirkler, C. H.	'81
Berry, Robert W.	'91	Clark, E. W.	'86
Bird, Harry L.	'91	Clark, F. M.	'85
Birkmier, Harry W.	'92	Clark, G.	'82
Bliss, H.	'69	Clark, J. B.	'80
Block, L. P.	'89	Clark, J. T.	'76
Bloomfield, E. M.	'69	Coad, N. G. O.	'75
Blum, E.	'84	Cody, Bert E.	'92

Coffin, C. L.	'84	Epley, A. W.	'94
Cole, W. W.	'79	Ewell, E. E.	'88
Coleman, Sheldon	'93	Ewell, H. P.	'85
Collins, C. F.	'72	Ewing, F.	'70
Collins, W. E.	'90	Faber, Fred	'93
Condon, W. D.	'86	Farnum, L.	'94
Conrad, J. F.	'84	Fasquelle, L. J.	'82
Conrads, J. R.	'86	Fellows, C. A.	'80
Cook, Amosa D.	'92	Felt, G. H.	'86
Cook, G. S.	'73	Field, E. C.	'83
Cooke, F. A.	'83	Finley, W. E.	'79
Cooper, W. H.	'84	Fischer, Richard	'92
Corbin, John W.	'91	Fitch, H. A.	'71
Cotton, R. M.	'74	Flanders, A. G.	'85
Coughlin, J.	'76	Flick, O. C.	'71
Covert, S.	'69	Flint, M. S.	'89
Craig, J. T.	'84	Foote, C. E.	'80
Crampton, C. A.	'82	Ford, C. E.	'70
Crampton, C. B.	'71	Ford, J. M.	'69
Crane, K. (Mrs. Johnson)	'74	Fox, A. L.	'69
Croman, J. M.	'87	Frank, H. O.	'83
Crombie, S. M.	'82	Franz, H. S.	'89
Crowley, C. F.	'89	Frazer, F. H.	'84
Cunningham, H.	'82	Fritts, F. F.	'74
Cunningham, T. N.	'85	Fromm, John David	'93
Curtis, A. C.	'70	Frost, H. J.	'89
Cushing, G. M.	'84	Fuller, L. C.	'76
Cushman, H. DeP.	'69	Gage, C. T.	'79
Damon, B. W.	'83	Gardner, L. H.	'84
Damon, W. E.	'84	Gatchell, E. E.	'81
Daniels, G. B.	'86	Gates, W. H.	'77
Davis, Frank F.	'91	Gebauer, C. J.	'80
Davis, C. L.	'85	Geddes, A. B.	'85
Davis, L. M.	'74	Geddes, Lillian M.	'93
Davoll, David Lake Jr.	'93	Geisler, J. F.	'80
Dawson, B. F.	'79	Gentsch, G. T.	'71
Dawson, G. V.	'84	George, E. L.	'69
Dawson, J. H.	'83	Gessler, M.	'82
Dean, G. E.	'82	Gibson, E. D.	'78
Denison, J. J.	'82	Gibson, W. M.	'83
Denny, J. D.	'83	Glazier, F. P.	'80
Deyo, L. H.	'82	Godfrey, C. P.	'84
Dickinson, O. B.	'75	Goecker, L.	'82
Dietrick, C. W.	'76	Goetter, F. B.	'83
Dilworth, M. (Mrs. Comly)	'82	Goodrich, L. A.	'82
Dingley, C. A.	'76	Gower, A. C.	'70
Dixon, G. F.	'77	Graham, Abner B.	'93
Dodd, C. W.	'82	Graham, J. B.	'71
Doehne, W. H.	'87	Greaves, Edith E.	'91
Dothany, W. A.	'87	Green, Frank A.	'91
Doty, J. W.	'86	Green, M. U.	'76
Doty, W. P.	'86	Greene, A. L.	'82
Douglas, S. T.	'74	Gries, Joseph M.	'91
Drake, Fred D.	'92	Griffen, T.	'89
Dryfoos, L. A.	'87	Griffith, W. F.	'77
Duncan, C. G.	'74	Griggs, O.	'75
Dunn, J. S.	'85	Grimwood, C.	'76
Dunn, W. L.	'89	Grochau, E. A.	'94
Dupont, R. S.	'87	Gunder, S. H.	'81
Eastwood, J. F.	'74	Gundrum, G.	'76
Eaton, H. K.	'86	Guy, O. G.	'70
Eaton, J. M.	'79	Haag, Elliott H.	'92
Eaton, Mattie.	'84	Hagle, P. N.	'70
Eberbach, W. F.	'88	Haigh, C. T.	'86
Eddy, C. H.	'76	Haigh, D. L.	'85
Egeroff, A. (Mrs. Fuller)	'78	Hale, A. K.	'73
Ehrhardt, H.	'74	Hall, G. C.	'83
Ellis, L. A.	'87	Hallock, A. A.	'77
Emanuel, Julia E.	'89	Hance, S. S.	'87

Harrington, Harriet L.	'81	Jewett, H. S.	'70
Harris, B. A.	'77	Johnson, B. L.	'89
Harvey, C. B.	'84	Johnson, C. S.	'75
Harvey, G.	'74	Johnson, J. S.	'77
Hasbrouck, W. A.	'78	Johnson, Marion E.	'77
Hatch, H. F.	'70	Johnson, O. C.	'71
Hauck, T.	'77	Johnston, J. J.	'77
Hauenstein, W.	'83	Jones, A. A.	'82
Havenhill, L. D.	'93	Jones, G. (Mrs. Cuscaden)	'74
Hawes, G. S.	'90	Jones, J. H.	'94
Hawley, E. P.	'79	Jones, J. R.	'90
Hawkes, R. E.	'88	Jones, M. A.	'87
Heard, Mary K.	'92	Josenhans, R. J. C.	'82
Hearne, Joseph C.	'91	Judson, F. E.	'80
Heath, R. M.	'89	Kahn, Harry	'91
Heim, H.	'78	Kebler, L. F.	'90
Heim, W.	'82	Keith, F. R.	'89
Heimbach, S. J.	'79	Kelly, J. P.	'79
Heister, C. W.	'78	Kelly, M. C.	'71
Henderschott, F. E. (Mrs. Henning)	'87	Kelly, Wm. A.	'92
Henning, E. L.	'69	Kennedy, E. J.	'82
Henning, F. J.	'87	Kennedy, Edward M.	'91
Henry, G. C.	'74	Kesley, A. P.	'77
Hesse, B. C.	'89	Kidder, S., Jr.	'88
Higgins, G. E.	'70	King, Joseph C.	'91
Higley, W. K.	'83	Kirby, M. S.	'90
Hill, Charles Otis.	'93	Kirby, T. E.	'90
Hirth, G. J., Jr.	'89	Kirchgeßner, W. C.	'89
Hirth, P. H.	'86	Kirchmaier, G. A.	'83
Hitchcock, John E.	'91	Kirk, D.	'77
Hoehn, J.	'82	Klein, Julius M.	'92
Hoffman, A. G.	'84	Klingmann, T.	'90
Hoge, W. B.	'84	Knapp, L. B.	'81
Hollan, L. H.	'69	Knapp, V.	'77
Hollis, C. W.	'90	Knox, S. R.	'94
Holloway, W. J.	'76	Koehnle, O. H.	'78
Holthoeffer, H. J.	'83	Koon, C. S.	'83
Hood, C. H.	'69	Koons, C. W.	'79
Hopper, A. G.	'84	Kramer, L. G.	'89
Hopper, C. H.	'75	Krause, B. S.	'87
Horine, D. P.	'88	Krug, W. H.	'89
Hosack, H. E.	'83	Kuhlman, E.	'74
Houghton, P. S.	'79	Lake, C. N.	'84
Houghton, E. M.	'93	Landers, Alfred E.	'92
Howell, C. C.	'70	Lauer, B. J.	'85
Hower, Phil. G.	'92	Leamon, G. P.	'84
Hubbard, F. J.	'77	Ledman, O. S.	'83
Hubbard, John L.	'91	LeFevre, E. L.	'83
Hubbard, T. H.	'82	Leisenring, W.	'87
Huber, L. H.	'90	Leist, J. L.	'75
Hudson, C. H.	'74	Levy, H.	'88
Hudson, H. H.	'94	Levy, M. M.	'90
Hueber, C. F.	'84	Lewis, D.	'77
Huested, Frank P.	'91	Lilly, E. A.	'80
Huhn, C. H.	'81	Little, J. R.	'76
Humiston, K. P.	'77	Lobb, A. S.	'77
Huntington, H. N.	'74	Lockwood, W. S.	'89
Huntsman, A.	'74	Logan, R.	'77
Ilhardt, W.	'90	Lohman, G. H.	'70
Irwin, J. L.	'80	Lohrstorfer, Joseph.	'92
Jackman, W. F.	'87	Long, W. L.	'77
Jackson, Charles Elsworth.	'93	Longstaff, C. H.	'82
Jackson, George R.	'92	Longwell, E. B.	'82
James, H. F.	'76	Lonstorf, G. J.	'80
Janney, R. L.	'89	Loomis, J. H.	'81
Jarman, E. M.	'90	Loudenbeck, Harry C.	'91
Jarvis, J. W.	'69	Lovin, C. C.	'81
Jensen, P. C.	'79	Lupinski, H.	'78
Jenter, C. G.	'89	Lynn, J.	'76

Maas, F. N.	'80	Palmer, G. H. M.	'82
Maltbie, W. F.	'69	Palmer, W.	'90
Mann, A.	'80	Palmer, H.	'85
Marshall, E. H.	'87	Parker, A. S.	'79
Marshall, E. S.	'80	Parker, C. E.	'85
Martzloff, C. E.	'90	Parker, F. C.	'81
Massey, F. W. H.	'76	Parker, R. J.	'85
Massey, S. F.	'71	Parkill, S. E.	'77
Maxwell, J. C.	'04	Parrott, B. E.	'81
McCarthy, R. H.	'73	Parsons, C. W.	'81
McCrilles, J. E.	'85	Parsons, H. B.	'76
McCrea, H. F.	'81	Parsons, James H.	'92
McCullough, R. S.	'80	Passolt, H. A.	'88
McGee, Thomas H.	'91	Parkinson, F. E.	'89
McGregor, J. C.	'94	Pattison, George H.	'92
McGuire, B. J.	'90	Payne, C. E.	'90
McKimmie, W.	'70	Pease, T. D.	'84
McNeil, M. (Mrs. J. O. Reed)	'82	Peck, Frank S.	'91
McNoah, Grace E.	'04	Pengra, C. P.	'83
Mead, A. H.	'94	Pennington, J. E.	'88
Mehlhop, F. W.	'89	Perry, F. W. R.	'80
Meinert, G.	'86	Pett, W. F.	'85
Melcher, A. B.	'85	Peyton, C. S.	'84
Melville, J. E.	'85	Phillips, D. A.	'71
Meredith, E. E.	'82	Pierce, Bessie Gillespie.	'93
Merkel, Charles W.	'93	Pierron, J. J.	'76
Merell, A. F.	'71	Post, M. E.	'77
Merrell, O. A.	'70	Powell, J. Z.	'71
Merrett, P. D.	'80	Prentice, F. F.	'72
Meyer, T. F.	'78	Pryer, C. E. (Mrs. Bartlett)	'82
Meyer, O. P.	'90	Pugh, F. B.	'74
Miller, Emerson R.	'92	Purtscher, C.	'90
Miller, T. W.	'86	Pusch, Oscar C.	'92
Miller, J. J.	'78	Quayle, W. T.	'81
Milner, T. J.	'90	Ranke, W. F., Jr.	'85
Miner, M. A.	'71	Ransom, R. B.	'82
Mills, C. W.	'70	Raynale, F. B.	'88
Mitchell, A. S.	'87	Reed, E. M.	'77
Moody, L. W.	'78	Reeve, J. C.	'80
Moore, S. S.	'71	Reppert, F.	'72
Moore, L. G.	'69	Reule, G. A.	'87
Morgan, J. W.	'76	Rex, R. G.	'69
Morris, George A.	'93	Reyer, T.	'81
Morris, J. E.	'82	Rice, E. F.	'85
Morse, E. H.	'81	Rice, S.	'73
Moss, J. C.	'75	Riebe, C.	'84
Moss, J. R.	'70	Rieger, C. F.	'83
Muir, J. D.	'84	Risser, E. J.	'76
Mull, R. F.	'79	Robertson, F. L.	'94
Mummery, A. E.	'85	Robinson, Thomas E.	'92
Murdock, T. E.	'94	Rockwell, M.	'89
Murray, Benjamin L.	'91	Rockwell, O. M.	'82
Neal, J. C.	'69	Rodi, C. H.	'80
Newman, I. N.	'70	Roe, J. O.	'70
Newton, Welles B.	'93	Rogers, A. S.	'85
Newton, W. E.	'70	Romans, E. J.	'83
Nichols, M. F.	'94	Romig, S. V.	'70
Nickerson, Frederick H.	'93	Rood, G. W.	'81
Niermann, H. G.	'90	Roos, C. L.	'83
Noll, M.	'81	Rouse, W. H.	'69
North, S. J.	'85	Rowland, C. W.	'89
Oaks, J. F.	'69	Royer, T.	'82
Obermann, R. F.	'83	Roy, H. M.	'76
O'Connor, Delia.	'94	Ruddiman, E. A.	'86
Oechsler, A.	'88	Rudolph, Karl Edwin.	'93
Oles, F. R.	'82	Runyan, E. G.	'86
Orth, L. P.	'79	Ruse, A. E.	'88
Osborne, D. E.	'79	Russell, Dorian M.	'91
Ostrander, R. H.	'83	Rutan, J. A.	'69

Sadler, A. ....	'69	Sutton, John B. ....	'92
Salls, J. H. ....	'75	Taylor, W. ....	'70
Sanford, William E. ....	'92	Teeter, C. W. ....	'80
Scherer, O. ....	'86	Tegarden, J. L. ....	'94
Scherer, William ....	'93	Textor, O. ....	'81
Schettler, G. M. ....	'89	Thayer, H. A. ....	'90
Scheuerman, W. M. ....	'90	Thompson, C. W. ....	'81
Schlotterbeck, J. O. ....	'87	Thompson, F. A. ....	'81
Schmid, O. F. ....	'90	Thompson, J. ....	'89
Schmid, T. ....	'81	Thompson, M. S. ....	'86
Schmidt, L. W. ....	'83	Thornburgh, T. R. ....	'82
Schmidt, S. ....	'81	Thum, F. ....	'80
Schmidt, Walter K. ....	'91	Thum, H. ....	'78
Schott, A. A. ....	'84	Tibbals, W. J. ....	'90
Schrage, W. ....	'74	Todd, A. H. ....	'80
Schumacher, A. C. ....	'84	Tompkins, J. W. ....	'77
Seifardt, L. E. ....	'78	Topping, C. O. ....	'94
Seltzer, Leonard A. ....	'92	Topping, G. B. ....	'87
Senier, A. ....	'74	Townsend, P. L. ....	'78
Sexton, W. A. ....	'81	Travis, F. A. ....	'84
Seymour, James ....	'94	Tremain, H. A. ....	'75
Shafer, C. M. ....	'83	Tupper, E. A. ....	'85
Shanafelt, F. P. ....	'83	Turner, D. D. ....	'81
Shaper, J. H. ....	'88	Turner, G. ....	'83
Sheedy, John T. ....	'92	Upjohn, A. (Mrs. Campbell) ....	'71
Sheffield, W. C. ....	'76	Upjohn, M. (Mrs. Sidman) ....	'71
Shepard, O. E. ....	'74	Van den Belt, N. ....	'82
Shepherd, Frank L. ....	'91	Vandivert, A. H. ....	'79
Sherrard, C. C. ....	'90	Van Etta, H. S. ....	'89
Shubel, C. G. ....	'87	Van Schoonhoven, Garrie G. ....	'91
Shuler, D. P. ....	'87	Van Zwaluwenburg, A. ....	'87
Smith, A. W. ....	'85	Varnum, E. C. ....	'83
Smith, A. D. ....	'78	Vedder, F. F. ....	'86
Smith, C. ....	'84	Vogel, A. F. ....	'89
Smith, Carl Edward ....	'93	Waggoner, A. T. ....	'84
Smith, E. D. ....	'86	Wagner, George ....	'93
Smith, Henry F. ....	'91	Wait, Cora L. ....	'90
Smith, J. H. ....	'77	Walker, A. L. ....	'79
Smith, Marie R. ....	'88	Wallace, R. H. ....	'78
Smith, O. J. ....	'89	Ware, E. J. ....	'88
Smith, S. W. ....	'76	Ward, R. M. ....	'81
Snow, Henry P. ....	'91	Warner, George J. ....	'92
Snow, H. W. ....	'84	Warren, W. McK. ....	'87
Soetje, E. ....	'88	Waterman, C. N. ....	'88
Soetje, Oscar H. ....	'92	Watson, Catherine M. ....	'76
Soyer, G. P. ....	'83	Watson, J. B. ....	'80
Spencer, E. ....	'78	Weaver, J. ....	'74
Spencer, H. H. ....	'85	Weeks, E. J. ....	'70
Spencer, J. J. ....	'83	Wehrli, A. C. ....	'79
Spenker, L. J. ....	'89	Weightman, M. ....	'89
Stabler, L. J. ....	'85	Wells, Joseph J. ....	'92
Staehle, W. C. ....	'75	Wells, W. H. ....	'75
Standart, C. J. ....	'87	Wertz, S. G. ....	'93
Stanton, E. M. ....	'69	Wesener, J. A. ....	'88
Stecher, H. W. ....	'76	Westfall, D. M. ....	'90
Stephenson, A. C. ....	'73	Wetzel, R. M. ....	'84
Steiner, S. G. ....	'85	Wheeler, A. M. ....	'81
Stevens, A. B. ....	'75	Wheelock, W. C. ....	'89
Stevens, J. C. ....	'83	Whinery, J. B. ....	'88
Stevens, M. B. ....	'70	White, B. W. (Mrs. W. Hager) ....	'83
Stevens, R. H. ....	'77	White, W. H. ....	'82
Stevenson, W. E. ....	'84	Whitman, A. C. ....	'75
Steventon, G. C. ....	'94	Whitney, James W. ....	'91
Stewart, T. M. ....	'76	Whitlark, W. J. ....	'76
Stinson, E. L. ....	'82	Wickwire, F. ....	'82
Stivers, E. S. ....	'86	Wilbur, T. S. ....	'73
St. John, W. I. ....	'84	Wiley, C. D. ....	'87
Stone, C. G. ....	'77	Willhite, E. L. ....	'84
Styles, M. D. ....	'71	Williams, C. H. ....	'94



---

Williams, S. W.....	'81	Wood, J. B.....	'89
Willmarth, G. E.....	'75	Wood, L. N.....	'79
Wilson, F. L.....	'79	Worden, C. E.....	'78
Wilson, G. E.....	'78	Wrampelmeier, T. J.....	'78
Wilson, O. L.....	'81	Wurmb, T. H.....	'81
Wilson, W. M.....	'71	Wyckoff, W. C.....	'84
Wise, C. H.....	'90	Wyman, H. S.....	'77
Wise, P. E.....	'94	Young, A. V. E.....	'75
Wiseman, F. D.....	'88	Young, A. L.....	'77
Wolcott, W. A.....	'70	Young, R. D.....	'90
Wolf, F. C.....	'80	Zeig, A. C.....	'89
Wood, C.....	'75	Zerse, O. G.....	'82
Wood, H. R.....	'90	Zwick, K. G.....	'88

# Contents.

---

	PAGE.
The Faculty.....	3
ANNOUNCEMENT FOR 1895-96.....	5
Calendar.....	5
<i>Requirements for Admission:</i>	
To the College Course of Two Years.....	5
Of Students not Candidates for a Degree.....	7
To the College Course of Four Years....	8
To Advanced Standing.....	10
<i>Courses of Instruction:</i>	
In Pharmacy.....	11
In Pharmacognosy and Materia Medica.....	12
In General Chemistry.....	13
In Analytical Chemistry.....	13
In Organic Chemistry.....	15
In Physiological Chemistry.....	16
In Pharmacology.....	17
In Mineralogy.....	17
In Physics.....	17
In Research.....	17
Fellowships.....	18
Succession of studies:	
In the Course of Two Years.....	18
In the Course of Four Years.....	19
In Selected Studies.....	20
EXAMINATIONS.....	21
REQUIREMENTS FOR GRADUATION:	
<i>With the Degree of Pharmaceutical Chemist.....</i>	22
<i>With the Degree of Bachelor of Science in Pharmacy.....</i>	23
THE LIBRARY, BOOKS OF REFERENCE AND TEXT-BOOKS.....	24
THE MUSEUM.....	25
FEES AND EXPENSES.....	26
STUDENTS IN 1894-95.....	27
REGISTER OF THE ALUMNI OF THE SCHOOL OF PHARMACY, with present Residence and Occupation..	30
INDEX TO NAMES OF GRADUATES, with year of graduation.....	74

UNIVERSITY OF MICHIGAN

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# SCHOOL OF PHARMACY

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ANNUAL ANNOUNCEMENT

AND

REGISTER OF ALUMNI

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TWENTY-NINTH YEAR, 1896-97

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ANN ARBOR, MICH.:  
PUBLISHED BY THE UNIVERSITY  
1896

**ANN ARBOR**  
**THE INLAND PRESS**  
**1896.**

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(Office at Lansing.)

## THE UNIVERSITY AND THE STATE.

The University of Michigan is a part of the public educational system of the State. The governing body of the institution is a Board of Regents, elected by popular vote for terms of eight years, as provided in the Constitution of the State. In accordance with the law of the State, the University aims to complete and crown the work that is begun in the public schools by furnishing ample facilities for liberal education in literature, science and the arts, and for thorough professional study of medicine, pharmacy, law and dentistry. Through the aid that has been received from the United States and from the State, it is enabled to offer its privileges, without charge for tuition, to all persons, of either sex, who are qualified for admission. While Michigan has endowed her University primarily for the higher education of her sons and daughters, it must be understood that she opens the doors of the institution to all students, wherever their homes. It is in this broad, generous and hospitable spirit that the University has been founded, and that it endeavors to do its work.

# FACULTY.

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JAMES B. ANGELL, LL.D.,  
PRESIDENT.

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**General Chemistry:**

PAUL C. FREER, PH.D., M.D., and DAVID M. LICHTY, M.S.

**Qualitative Analytical Chemistry, and Inorganic Chemical Technology:**

OTIS C. JOHNSON, A.M., PH.C.

**Quantitative Analytical Chemistry and Metallurgical Chemistry:**

EDWARD D. CAMPBELL, B.S.

**Organic Chemistry:**

ALBERT B. PRESCOTT, Director of the Chemical Laboratory.

**Synthetic Preparations, Organic Analysis and Drug Assaying:**

MOSES GOMBERG, Sc.D., with leave of absence in Europe for 1896-97, PERRY F. TROWBRIDGE, PH.B., and DAVID L. DAVOLL, PH.C.

**Mineralogy and Crystallography:**

WILLIAM H. PETTEE, A.M.

**The Botanical Laboratory:**

VOLNEY M. SPALDING, A.B., PH.D., Director.

**Botany and Cell Morphology, and Pharmacognosy and Materia Medica:**

JULIUS O. SCHLOTTERBECK, B.S., (Chem.), PH.C.

**Pharmaceutical Technology, Prescriptions, Manufacturing Pharmacy:**

ALVISO B. STEVENS, PH.C.

**Laboratory of Pharmacology, Laboratory of Bacteriology, Laboratory of Physiological Chemistry, and Lecture Course on Physiology:**

## THE FACULTY OF MEDICINE AND SURGERY.

**Mathematics, Physics, Languages, and Elective Studies:**  
THE FACULTY OF LITERATURE, SCIENCE, AND THE  
ARTS.

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## ASSISTANTS TO THE FACULTY.\*

**Pharmaceutical Preparations:** JAMES SEYMOUR, PH.C.  
**Qualitative Analysis:** HERMAN E. BROWN.  
**Quantitative Analysis:** WALTER SCOTTEN.  
**General Chemistry:** JESSIE E. WHITSIT.

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\* In the year 1895-96.



# Announcement for 1896-97.

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- For the Conditions of Admission, see pages 8 to 12.  
For Laboratory Studies and Lectures, pages 12 to 19.  
The Order of Studies in the Two Years' Course, page 20.  
The Order of Studies in the Four Years' Course, page 21.  
Courses in Selected Studies, page 22.  
Studies in Research, page 19.  
Requirements for Graduation, page 24.  
Fees and Expenses, page 27.  
Register of Alumni, page 31.  
Index of Graduates with year of graduation, page 36.
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## CALENDAR OF THE COLLEGE YEAR.

1896.

- September 23-28. *Examination for Admission* to the Four Years' Course.  
September 29-30. *Examination for Admission* to the Two Years' Course, beginning with all applicants at 9 A. M. of the 29th.  
October 1. FIRST SEMESTER BEGINS.  
November — Thanksgiving recess of three days.  
December 18. (Evening). Holiday Vacation begins.

1897.

- January 5. Exercises resumed.  
February 19. (Evening). FIRST SEMESTER CLOSES.  
February 23. SECOND SEMESTER BEGINS.  
April 16. (Evening). Recess begins, ending April 26, (Evening).  
July 1. COMMENCEMENT IN ALL THE DEPARTMENTS OF THE UNIVERSITY.

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## REQUIREMENTS FOR ADMISSION.

### ADMISSION TO THE COLLEGE COURSE OF TWO YEARS.

Leading to the Degree of Pharmaceutical Chemist.

Applicants for admission must be at least eighteen years of age.

It is of advantage to obtain at least a year of practical training in a drug store before entering the college course in pharmacy. The required work in the school leaves the student no time for an engagement in a drug store during the college year.

**ADMISSION OF GRADUATES OF HIGH SCHOOLS.**—Applicants holding diplomas of graduation from any of the full courses of the schools visited by this University and included in the list on pages 47 to 51 of the University Calendar are admitted without examination, as are, also, graduates of four-year courses of other high schools of good standing.

**ADMISSION FROM COLLEGES.**—Students who have completed at least one year's work in an approved college of literature and science, and who bring explicit and official certificates describing their course of study and scholarship and testifying to their good character, will be admitted without examination. Graduates of colleges of literature and science, and graduates of colleges of medicine or pharmacy, are also admitted without being examined. Concerning admission to Advanced Standing in the college studies, see page 12.

**EXAMINATIONS FOR ADMISSION.**—These are upon the following named subjects:

1. **ENGLISH.**—Exercises in the writing of English with correctness. Especial regard is paid to orthography, punctuation, use of capitals, grammatical construction, and rhetorical fitness.

2. **MATHEMATICS.**—*Arithmetic.*—Fundamental rules, Fractions, (common and decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Meas-

ures. *Algebra*.—Fundamental Rules, Fractions, Equations of the First Degree containing two or more unknown quantities. *Geometry*.—The elements of Plain Geometry as given in Olney's New Elementary Geometry, or an equivalent in other authors.

3. **LATIN OR GERMAN**.—The applicant may offer (1) three years of preparation in Latin; or (2) two years in Latin and one year in German; or (3) one year in Latin and two years in German. Those who offer three years in Latin are examined in the *Grammar*—a thorough preparation in the elements; in *Prose Composition*—Jones's Exercises in Latin Prose Composition, or an equivalent in some other text-book; and in *Reading*—four books of Cæsar's Commentaries and six select Orations of Cicero, or an equivalent amount in some other text-book. Those who offer two years of Latin are examined as above, except in the Orations of Cicero. Those who offer one year of Latin are examined in an amount equivalent to Jones's First Latin Book. Those who offer one year of German should have had daily recitations on the Grammar during that time, accompanied by weekly exercises in writing, and the reading of seventy-five pages of some German reader. Those who offer two years of German should have devoted one year to the reading of some complete work of literary art.

4. **PHYSICS**.—Carhart and Chute's Elements of Physics, or an equivalent.

5. **BOTANY**.—Practical exercises in the study of common plants, so conducted as to secure a familiar acquaintance with the essential facts of vegetable morphology, physiology, and relationship. The method pursued in Spalding's Introduction to Botany will indicate the kind of work desired.

EXAMINATIONS FOR ADMISSION OF THOSE WHO HAVE BEEN ENGAGED IN THE PRACTICE OF PHARMACY.—Applicants who bring evidence of having been engaged in the practice of pharmacy for at least two years may be admitted upon examination in the following branches:

1. **ENGLISH**.—The same as given above.

2. **MATHEMATICS**.—*Arithmetic*.—The same as given above. *Algebra*.—The same as given above.

3. **LATIN OR GERMAN**.—In Latin, Jones's First Latin Book or an equivalent amount in any other text-book. Instead of Latin, German to the extent of a full year's study is accepted. Those who have a speaking and reading acquaintance with German are held to an examination in the Grammar.

**ADMISSION OF STUDENTS NOT CANDIDATES FOR A DEGREE.**

To take selected studies.

Persons over nineteen years of age who bring evidence of having been engaged in the practice of pharmacy for at least two years may be admitted to studies upon passing the examination in English as stated on page 8. The same privilege is accorded to persons over twenty-one years of age who have had professional experience approved by the Faculty, whether it have been in pharmacy or in another pursuit, the same examination being required as to the correctness of English writing.

Students admitted to studies under these provisions are not candidates for any degree and do not become eligible for graduation until they have passed all the examinations of entrance to the course leading to the degree which they seek to obtain. Those admitted as students not candidates for a degree, can become eligible for graduation with the degree of Pharmaceutical Chemist when they have passed the Examinations for Admission of those who have been engaged in the practice of pharmacy. To become eligible for graduation with the degree of Bachelor of Science, the student must meet the full entrance requirements of the course for that degree, as stated below.

Students not candidates for a degree may select such studies as they are found prepared to pursue, under the regulations of the Faculty. Courses of selected studies are arranged for students, to suit their purposes and qualifications. Selected studies may be continued so long as they are carried with success and profit; in the judgment of the Faculty.

**ADMISSION TO THE COLLEGE COURSE OF FOUR YEARS.\***

Leading to the Degree of Bachelor of Science in Pharmacy.

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\*The requirements for admission to this course are and will be in every respect the same as those for admission to the course leading to the degree of Bachelor of Science, in the Department of Literature, Science and the Arts. See University Calendar, 1895-96, pages 40 and 56.

Applicants must be at least sixteen years of age.

**ADMISSION OF GRADUATES OF HIGH SCHOOLS.**—Graduates from the B. S. course in the preparatory schools visited and approved by this University, as named on pages 47 to 51 of the Calendar for 1895-96, making application within a year and three months after their graduation, and bringing a certificate from the school stating that they have sustained examinations and are presented as candidates, will be admitted without further examination.

**ADMISSION FROM COLLEGES.**—Students who have completed at least one year's work in an approved college of literature and science, and who bring explicit and official certificates describing their course of study and scholarship and testifying to their good character, will be admitted without examination. Graduation from a professional school, or from the two year's course in this School, does not relieve the applicant from examination.

**EXAMINATIONS FOR ADMISSION TO THE COURSE OF FOUR YEARS.**—In each of the following named subjects, to the extent more fully stated for each subject in the University Calendar, page 40, and further, page 56.

1. **ENGLISH LANGUAGE, COMPOSITION AND RHETORIC.**
2. **HISTORY.**—Meyer's General History, or an equivalent; and the History of the United States as far as the close of the Revolutionary War.
3. **MATHEMATICS.**—Algebra, to quadratic equations inclusive: Geometry, plane, solid and spherical. (Plane Trigonometry is advisory, for the support of physics in the first semester in college.)
4. **LATIN, GERMAN, FRENCH.**—Of these three languages, two are required. The candidate may offer Latin and German, or German and French, or Latin and French. It is expected that as much as two years will be given to the preparation in each of the two languages offered.
5. **PHYSICS.**—An amount represented by Carhart and Chute's Physics.
6. **BOTANY.**—Practical studies, such as are directed in Spalding's Introduction to Botany.
7. Two additional sciences, taken from Chemistry, Geology, Zoology, Physiology, Physical Geography, and Astronomy.

Admission Conditions are subject to the rules given in the Calendar of the University, 1895-96, page 112.

**ADMISSION TO ADVANCED STANDING IN COLLEGE STUDIES.**

Students who have gained admission to the School may apply for credit in any of the college studies which they have pursued in another college, or in a high school whose graduates are admitted. Such application should be made to the Dean at the time of entering the School, and will be referred to the professors in charge of the studies in which credit is asked. In each case the professor will determine how much credit, if any, can be given. To this end he may appoint a time for examination of the applicant upon the study. Applicants are desired to bring explicit credentials as to the work done. Students in the four year's course, applying for advanced credits, will govern their applications according to the rules given in the University Calendar on page 42, (1895-96), making application to the Dean of this Department. Credits are received from the other Departments, and from the Summer School, of this University. Not more than twelve hours of credit from the Summer School can be applied toward the degree of Bachelor of Science. Credits from other Schools of Pharmacy are adjusted separately for each study, as stated above. Owing to differences in the order and extent of the studies, credits cannot be accounted for in years of pharmaceutical college study.

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**COURSES OF INSTRUCTION,**

**INCLUDING LECTURES, LABORATORY STUDIES, AND RECITATIONS.**

The amount of work in each course is expressed in *hours*, an "*hour*" being *one exercise a week for one semester*, four-and-a-half months. A lecture or recitation is one hour in length. A laboratory exercise employs three hours,

more or less, being continued until the work assigned to one exercise, or a due proportion of the work assigned to the course, has been completed. The satisfactory completion of *one exercise a week for one semester*, including a sufficient standing in the examination held at the end of the semester, constitutes one *hour of credit* toward graduation. It is intended that a lecture or a recitation, with the personal study necessary to maintain the student's standing in the subject, will take in all as much time as a laboratory exercise. Laboratory work is given with recitations or lectures, or with both recitation and lecture, in the same course of study, and the necessary text-book work of the student by himself is demanded for the recitation or lecture. Therefore an *hour of credit* has the same value whether obtained in a course of lectures or in a course of laboratory exercises. The several courses in any subject are lettered in the order in which they are to be taken by the student. The numbers in brackets are numbers of courses given in the Department of Literature and Science.

### PHARMACY.

COURSE A.—*Theory and Practice of Pharmacy.*—*Three hours a week.* Second Semester. Lectures and Recitations. Professor STEVENS.

History of pharmacopœias and recitations from the U. S. Pharmacopœia. Specific gravity, weights, measures and their relations to each other. Problems in parts by weight from chemical proportions, weights, volumes and percentages of strength. Apparatus and manipulations used in generating and regulating heat for pharmaceutical use. Solutions, filtrations, decantation, clarification, pulverization, granulation, crystallization, sublimation, percolation, distillation, dialysis, etc. Apparatus and specimens from the University museum, diagrams, etc., are used in illustrating the above subjects.

COURSE B.—*Operative Pharmacy and Pharmaceutical Preparations.*—Daily laboratory work and daily recitations, making *ten hours* of credit. First Semester. To be preceded by Course A in Analytical Chemistry, completed clear of conditions. Professor STEVENS.

Classification of official preparations; laboratory study of pharmaceutical methods; recitations upon manufacturing procedures. The satisfactory production of about one hundred and fifty preparations required,

embracing the classes of the U. S. Pharmacopœia and National Formulary, galenicals, scales, and synthetic chemicals, from the simplest to the most difficult. Chemical proportions calculated into parts by weight and by volume, with practical adjustment of conditions carried out in the laboratory work of the student. Critical application of the pharmacopœial tests to commercial articles as well as to the preparations of the student. The daily laboratory exercise takes about four hours.

**COURSE C.**—*Pharmaceutical Technology and Prescription Practice.*—Four hours of credit. Second Semester. Lectures, and Work at the Prescription Stand, the time taken in the prescription exercises being dependant upon the previous experience and the ability of the student. Professor STEVENS.

The technology of inorganic and organic articles used in pharmacy. Sources, manufacture, commercial history, prevalent impurities, standards of purity and strength, official tests, technical and public uses. The Art of Dispensing. *Fac simile* of prescriptions will be thrown upon the screen by the aid of a stereopticon and criticised as regards quantities, doses, errors, incompatibilities, and methods of compounding. Prescription writing, practice in the actual chirography of prescription files.

### PHARMACOGNOSY.

MICRO-BOTANY, PHARMACOGNOSY, PHARMACOLOGY (MATERIA MEDICA.)

**COURSE A.**—*Pharmacognosy* until Christmas. Prof. SCHLOTTERBECK. Then *Organography* until the end of the semester. Prof. SCHLOTTERBECK. Two hours of credit. First Semester. Practical Exercises.

In pharmacognosy, the dry acids and inorganic salts of the Pharmacopœia, in all their commercial and medicinal forms. A study for external acquaintance with the articles, by sight and other senses, each article being carried from hand to hand around the class during a lecture hour, with constant practical recitation.

In organography, class-work in the morphology and physiology of plants, with use of drawings, charts, herbarium specimens, and crude medicinal drugs.

**COURSE B.**—*Micro-botany.*—Three hours of credit. Second Semester. Work in the botanical laboratory twice a week, two hours each time, and a lecture once a week. Prof. SCHLOTTERBECK.

Structural botany and the delineation of cell-structure, and cell-contents, tissues and tissue systems. Minute histological study of typical crude drugs and their adulterants. The microscopical examination of powder-drugs, foods, and condiments, and the detection of adulterations. Reports upon commercial samples obtained in open market. Original investigation upon important crude drugs.



COURSE C.—*Pharmacognosy*.—Two hours of credit. First Semester. Practical exercises. Prof. SCHLOTTERBECK.

For the ready recognition of the various articles of pharmaceutical commerce. A study by the methods stated for Course A.

COURSE D.—*Materia Medica*.—Three hours a week. First semester. May be taken in the same semester as Course C. Recitations and lectures. Prof. SCHLOTTERBECK.

Pharmacology, Posology, and Toxicology. The classification and history of medicines, their physiological action, their preparations and doses. The symptoms of poisoning and the use of antidotes.

COURSE E.—*Pharmacognosy*.—Two hours a week. Second Semester. Continuation of Course C. Prof. SCHLOTTERBECK.

COURSE F.—*Materia Medica*.—Three hours a week. Second Semester. May accompany Course E. Continuation of Course D. Prof. SCHLOTTERBECK.

### GENERAL CHEMISTRY.

COURSE A. [Course 1.]—*Elementary Inorganic Chemistry*, Descriptive and Experimental. Three hours of credit. (Advanced credit from high schools upon entrance examination.) First Semester. Mr. HIGLEY.

COURSE B. [Course 4.]—*Inorganic Chemistry, Descriptive and Experimental*. Continuation of Course A. Four hours of credit. Second Semester. Lectures. Professor FREER.

COURSE AA.—*Inorganic Chemistry, Descriptive and Experimental*. Five hours of credit, lectures and quizzes five times a week. First Semester. Professor FREER.

A beginning course extending further than Course A.

COURSE C.—*Physics*.—Four hours of credit, lectures four times a week. Advanced credit from high schools upon entrance examination. Second Semester. Mr. LICHTY.

### ANALYTICAL CHEMISTRY.

QUALITATIVE ANALYSIS, QUANTITATIVE ANALYSIS, TECHNICAL ANALYSIS.

COURSE A. [Course 1.]—*Qualitative Analysis*.—Laboratory work and recitations, each five times a week, giving ten hours of credit. Either First or Second Semester. Should be preceded or accompanied by a course in General Chemistry. Professor JOHNSON.

A prefatory drill upon the notation of metallic salts. Laboratory training in reactions of acids and bases, solubilities of salts, and means of separation. Synthetic operations. Chemical equations to be written on demand. After completion of the foregoing, the course in actual analysis of unknown mixtures, solid and liquid. Mixtures presenting agents

of oxidation and reduction; and the study of oxidation in the system of notation with positive and negative units of valence. The laboratory exercises take from three to four hours each.

COURSE B. [Course 4.]—*Quantitative Analysis*.—Laboratory work five times a week, and lecture-recitations twice a week, giving *seven hours* of credit. Either First or Second Semester. Must be preceded by Course A, completed clear of conditions. Professor CAMPBELL.

The determination of specific gravities; volumetric estimations; gravimetric determinations and separations. The results to come within specified limits of recovery. The laboratory exercises take from three to four hours each.

COURSE C. [Course 2.]—*Advanced Qualitative Analysis*.—Laboratory work three times a week, and recitations twice a week, giving *five hours* of credit. Second Semester. May follow Course A, of which it is a continuation. Professor JOHNSON.

COURSE D. [Course 5.]—*Advanced Quantitative Analysis*.—Laboratory work five times a week, a *five hour* course. Either First or Second Semester. Must be preceded by Course B. Professor CAMPBELL.

COURSE E. [Course 6.]—*Iron and Steel Analysis*.—Laboratory work, a *five hour* course. Either First or Second Semester. Open to those who have completed Course B, and received special permission.

COURSE F.—*Water Analysis*.—Laboratory work three times a week and reading, a Course of *three hours* of credit. Either First or Second Semester. Must be preceded by Course B. Professor PRESCOTT and Mr. DAVOLL.

Mineral water analysis, and the chemical methods of sanitary water analysis.

#### SHORTER COURSES IN QUALITATIVE CHEMISTRY FOR STUDENTS NOT CANDIDATES FOR A DEGREE.

Course G.—(1). *Three Months' Course*.—*Qualitative Chemistry*.—Laboratory work and recitations, each five times a week. Each laboratory exercise takes three or four hours, the recitation one hour, both in the time from one to six, P. M. *Begins October 1, January 5, March 29*. Class sections instructed by a graduate assistant under charge of Professor JOHNSON.

The notation of salts; solubilities as concerned in the inorganic reactions studied group by group; chemical equations in precipitation, solution, and gas generation; studies of chemical change resulting in "*incompatibilities*." A limited number of "unknowns" in actual analysis, not earlier than the last month of the course. The purpose of the course is an acquaintance with chemical change, rather than qualification as an analyst, the course being too brief for the latter.

(2) *Beginning Course of One Semester.* [Course 3].—*First Steps in Qualitative Analysis.*—Laboratory work three times a week, recitations twice a week. Second Semester. Professor JOHNSON. This course constitutes about one-half of Course A in Analytical Chemistry. It gives a little more analytical work than the three months' course.

### ORGANIC CHEMISTRY.

INCLUDING ANALYTICAL AND APPLIED ORGANIC CHEMISTRY.

COURSE A. [Course 10].—*Carbon Compounds.*—*Five hours* of credit. First Semester. To be preceded by a course in General Chemistry, and one in Analytical Chemistry. Lectures. Professor PRESCOTT.

A systematic study of organic compounds, their modes of synthetic production, the proofs of their structure, and their relationships. An introduction to the reference literature of organic chemistry. With each lecture there is a short colloquium upon the text-book, and a brief essay drawn from reference literature written and read by a member of the class.

COURSE B. [Course 11].—*Organic Preparations.*—*Two hours* of credit. Either First or Second Semester. To accompany or follow Course A. Laboratory work in Organic Synthesis, the exercises of three to four hours each week. Mr. DAVOLL.

Course B may be taken in part, or extended, to make *one hour* or *three hours* of credit.

COURSE C. [Course 12].—*Organic Preparations and Ultimate Analysis.*—*Five hours* of credit. Either First or Second Semester. May accompany or follow Course A; either in addition to Course B or instead of the latter. Laboratory work five times a week. A good command of the work of organic combustions can be obtained in this course. Mr. DAVOLL and Professor PRESCOTT.

Course B and C may be continued, each for the same time and credit additional, and under the same teachers, in either semester, constituting respectively Course BB [11a] and Course CC [Course 13.]

COURSE D. [Course 14].—*Organic Analysis, and Drug Assaying.*—*Five hours* of credit. Second Semester. To be preceded by Course A and by a course in quantitative analysis (Course B of Analytical Chemistry). Laboratory work with lectures. Mr. DAVOLL.

Qualitative and quantitative analysis for alkaloids, and certain other representative carbon compounds, drug assaying, the outlines of fat analysis. With sub-courses in technical organic analysis, adapted to the purposes of the student.

COURSE DD.—*Sanitary and Commercial Organic Analysis.*—*Five hours* of credit.—First or Second Semester. Continuation or alternative of Course D. Laboratory work and reading. May be devoted to Food

Analysis or to some branch of commercial analysis, such as that of Nostums on the Market, or that of Paint Materials. Professor PRESCOTT and Mr. DAVOLL.

COURSE E.—*Toxicology*.—Inorganic and Organic. Chemical and microscopical. *Three hours* of credit. Either First or Second Semester. Must be preceded by Course D and the pre-requisites of that course. Laboratory work and reading. Professor PRESCOTT and Mr. DAVOLL.

#### BEGINNING COURSES IN ORGANIC CHEMISTRY IN SECOND SEMESTER.

Obtained only by permission. Given primarily for classes in other Departments of the University. Candidates for a degree begin the subject with Course A and do not require these courses.

COURSE F.—(1) *Lectures on Organic Chemistry* three times a week. —*Two hours* of credit. Mr. TROWBRIDGE.

(2) *Lectures on Organic Chemistry* five times a week. [Course 28.] —*Four hours* of credit. Professor PRESCOTT.

#### PHYSIOLOGICAL CHEMISTRY.

COURSE A.—*Analysis of Urine*.—A course of *five hours* of credit, obtained in *three months*. Begins October 1, January 5, March 29. Must be preceded by a course in qualitative analysis, and one in organic chemistry. Laboratory work five times a week, and lectures three times a week,—all between 1 and 5 P. M. Professor NOVY in the Faculty of Medicine and Surgery.

The chemistry of normal and abnormal urine, including the synthetic preparation of urea and the most important members of the uric acid group, and methods for the quantitative determination of urea, uric acid, phosphates, chlorides, sulphates, sugar and albumin.

COURSE B. [Course 7].—*Physiological Chemistry* including the Analysis of Urine.—*Seven hours* of credit. Laboratory work daily and lectures three times a week, the course extending through the semester. Either First or Second Semester. Must be preceded by a course of qualitative analysis and a course in organic chemistry. And it is advisable that quantitative analysis should precede this course. Professor NOVY.

COURSE C. [Course 2].—*Bacteriology*.—*Five hours* of credit. Laboratory work daily for *three months*. The course begins October 1, January 5, March 29. Professor NOVY.

#### PHARMACOLOGY.

COURSE A.—*Pharmacological Laboratory*.—*Three hours* of credit. Obtained only by permission. Laboratory work and reading. To be preceded by Course A and Course D in organic Chemistry. It is of advantage to have had previous work in physiology. Professor CUSHNY in the Faculty of Medicine.

COURSE B.—*Physiology*.—Five hours of credit. First Semester. Obtained by permission. Lectures and recitations Must be preceded by a course in organic chemistry. It is also desirable that the student have had studies in anatomy. Professor LOMBARD.

### MINERALOGY.

COURSE A.—*Crystallography*.—Twelve lectures supplemented by practical exercises. In Second Semester beginning on a date to be announced. Professor PETTEE.

COURSE B. [Course 1.]—*Mineralogy*.—Two hours of credit. Includes Course A. Either First or Second Semester. To be preceded by a course in general chemistry. Lectures and practice.

COURSE C. [Course 2.]—*Mineralogy*.—Five hours of credit. Includes Course B as well as Course A. Second Semester. To be preceded by a course in general chemistry and a course in analytical chemistry. Lectures and practice. Professor PETTEE.

### PHYSICS.

*Physics* [Course 1.]—Five hours.—First Semester. Open to those who have had the B. S. entrance examination in physics, and to all others who have had sufficient preparation. A knowledge of plane trigonometry is indispensable. Mechanics, Sound and Light. Lectures. Professor REED.

*Physics* [Course 2.]—Four hours.—Second Semester. Must be preceded by [Course 1] in Physics and by a course in general or analytical chemistry. Electricity, Magnetism, and Heat. Lectures. Professor CARHART and Professor REED.

### RESEARCH.

The work of students is conducted in research in the several branches of science and technology, by the professors in charge, governed by the provisions of the Faculty. A student, duly prepared by previous training, may be admitted to any work of investigation for which he may be suited, by permission of the professor in charge of the work, subject to the regulations of the School. The period for research is limited, for undergraduates, to the final semester in the two years' course, and the senior year in the four years' course. Graduates of other colleges may enter at once upon research in this School. Holders of a Fellowship in this School must devote them-

selves wholly to research, and Graduate Students may do so if they desire. The research for a degree requires experimental work with the aim to obtain data not previously published. The indexing of chemical and pharmaceutical literature, in form for publication, is accepted as a necessary adjunct of research.

COURSES IN RESEARCH, In either First or Second Semester, and under the provisions named above, are entitled to such *number of hours* of credit as shall be determined by the professor in charge of the work. In this determination the quality of the work is to be taken as a joint factor with the time it has employed.

#### FELLOWSHIPS.

1. THE STEARNS' FELLOWSHIP.—Established in 1895, and provided for two years, by means of a gift made for this purpose by Messrs. Frederick Stearns & Company, of Detroit. The income of the Fellowship is three hundred dollars a year. For 1895-6 and 1896-7 the research will be in organic chemistry and pharmacology. Appointments to the Fellowship will be made by the Faculty from graduates of the School who have the qualifications for the work, wholly in research.

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### SUCCESSION OF STUDIES.

#### I. IN THE COURSE OF TWO YEARS.

*First Year, First Semester.*—General Chemistry AA; Analytical Chemistry A (Qualitative); Pharmacognosy A.

*First Year, Second Semester.*—Analytical Chemistry B (Quantitative); Pharmacognosy B (Micro-botany); Pharmacy A; General Chemistry C (Physics).

*Second Year, First Semester.*—Pharmacy B (Laboratory and Lectures); Organic Chemistry A; Pharmacognosy C and D (Materia Medica).

*Second Year, Second Semester.*—Organic Chemistry D (Drug Assaying); Pharmacy C (Technology and Prescription Practice); Pharmacognosy E and F (Materia Medica); Mineralogy A (Crystallography); Research work.

The studies enumerated above are without exception required for the degree of Pharmaceutical Chemist. They constitute an amount of work which taxes the full working power of a student of average quickness and strength of scholarship. Students who desire a longer time for the same work may apply for it on entering college, or during the first semester, and obtain from the Faculty a distribution of all the work through *five semesters, or six semesters*, as found advisable in each case.

## II. IN THE COURSE OF FOUR YEARS.

The student is limited by rule to *sixteen hours* of credit (sixteen exercises per week) in each semester.

The student must present, at the beginning of each Semester, his election of studies for that semester, using a blank provided for that purpose. The elections of studies are subject to approval of the Faculty, who will take action upon them without delay, and all further adjustments of studies are to be completed as early as the second Monday of the semester. The studies prescribed for graduation are given on page 24. All the studies of the School are open to election.

### ADVISORY SEQUENCE OF STUDIES.

(For a student who enters with Latin and German, and with Chemistry, as high school studies. To be modified for those who enter with French as one of the languages, or without chemistry. See page 11.)

Required Studies are given in italics.

*First Year, First Semester—Mathematics [Course 1a] three hours. Physics [Course 1] five hours. German, a two hour course. Pharmacognosy Course A, two hours. English [Course 1] two hours. Fourteen hours. (If entering without German [Course A] in this study, four hours. If entering without Chemistry, Course A, in this study, three hours.)*

*First Year, Second Semester.—Mathematics [Course 2a] four hours. General Chemistry, Course B, four hours. Pharmacognosy Course B*

(Micro-botany) *three hours.* French [Course A] *four hours.* *Fifteen hours.* (Instead of French [A] English [1a] and German *two hours* may be taken, or Physics [2] may be taken.)

*Second Year, First Semester.*—Analytical Chemistry Course A (Qualitative) *ten hours.* Pharmacognosy Course C, *two hours.* French [Course B] *two hours.* A language course or other study, *two hours.* *Sixteen hours.*

*Second Year, Second Semester.*—Analytical Chemistry Course B (Quantitative) *seven hours.* Pharmacy Course A, *three hours.* Pharmacognosy Course E, *two hours.* Mineralogy Course B, *two hours.* A language course of *two hours.* *Sixteen hours.*

*Third Year, First Semester.*—Pharmacy Course B (Laboratory and Lectures) *ten hours.* Organic Chemistry Course A, A part of Course B to make *six hours.* *Sixteen hours.*

*Third Year, Second Semester.*—Organic Chemistry Course D, *five hours.* Pharmacy Course C (Prescription practice and Technology) *four hours.* Of the following electives, not to exceed *seven hours:* Physiological Chemistry Course A (analysis of urine) *five hours,* or Course C (bacteriology) *five hours.* Organic Chemistry Course BB, *two hours,* or Course C, *five hours.* Completion of the required language courses Physics [Course 2] *four hours.*

*Fourth Year, First Semester.*—Pharmacognosy Course D (Materia Medica) *three hours.* Pharmacology Course A, *three hours,* Course B, *five hours.* Studies in research. Electives as above.

*Fourth Year, Second Semester.*—Pharmacognosy Course E (Materia Medica) *three hours.* Analytical Chemistry Course F (Water Analysis) *three hours.* Organic Chemistry Course DD (Food Analysis) *five hours,* or Course CC (Synthetic Manufactures) *five hours.* *Research.*

### III. IN SELECTED STUDIES.

Students not expecting to graduate can enter for selected studies at the beginning of the First Semester, October 1, and at the beginning of the Second Semester, February 19. Also for certain studies, on January 5, and on March 29.

For pharmaceutical purposes, the student who is limited to one year's college work, can do well in taking the regular studies of the First Year in the Course of Two Years as stated on pages 18 and 19.

Of the shorter courses usually most available for students having limited time in college, the following may be named:



The Three Months' Course in Qualitative Chemistry, October, January, March, (page 16).

- Course A in Pharmacy. Second Semester (page 13).

Course B in Pharmacy. First Semester (page 13). Only by permission.

Course A in Pharmacognosy. First Semester (page 14).

Course C in Pharmacognosy. First Semester (page 15).

Course A in General Chemistry. First Semester (page 15).

Course AA in General Chemistry. First Semester (page 15).

Course F in Organic Chemistry. Second Semester (page 18).

Course [28] in Organic Chemistry. Second Semester (page 18).

First Steps in Qualitative Analysis. Second Semester (page 17).

All the work of the School is open to students not candidates for a degree, so far as they are prepared to engage in it.

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## EXAMINATIONS.

The examination upon each Course of instruction is held at the time the work of that Course is completed. The examinations, therefore, are held mostly at the end of the semesters, in February and in June.

The result of an examination is reported by the Professor in charge, for each student enrolled, to the Faculty, in terms as follows:

*Passed.*—Entitling the student to full credit for the Course.

*Conditioned.*—Imposing some specified condition, usually to take another examination, the condition to be fulfilled before credit can be given.

*Provisionally Passed.*—With-holding the credit for the Course until the student shall have done better work in other studies, in the judgment of the Faculty as a whole, who can change the record of Provisionally Passed to a record of Passed, or Conditioned, or not Passed, whenever such change shall be justified by the scholarship of the student in his several studies.

*Not Passed.*—Requiring the student to go over the regular exercises of the study again before he receives another examination.

*Absent.*—With statement of the cause of absence; if the student have left the class, stating at what time; or stating if absent without excuse or explanation.

## REQUIREMENTS FOR GRADUATION.

[Experience in the business of pharmacy is not made a requirement for a degree.]

### I. *With the Degree of Pharmaceutical Chemist.*

[For requirements of college entrance, see page 7.]

#### FIRST YEAR, FIRST SEMESTER.

	Hours of Credit.*	Hours in Lect. & Rec.	Hours in Laboratory.
General Chemistry, Course AA, . . . . .	5	90	
Pharmacognosy, Course A, . . . . .	2	36	
Analytical Chem., Course A, <i>Qual.</i> , . . . . .	10	90	360
	<hr/>	<hr/>	<hr/>
Total for First Semester, . . . . .	17	216	360

#### FIRST YEAR, SECOND SEMESTER.

General Chem., Course C, <i>Physics</i> , . . . . .	4	72	
Pharmacy, Course A, . . . . .	3	54	
Pharmacog., Course B, <i>Micro-botany</i> , . . . . .	3	18	72
Analytical Chem., Course B, <i>Quant.</i> , . . . . .	7	36	360
	<hr/>	<hr/>	<hr/>
Total for Second Semester, . . . . .	17	180	432

#### SECOND YEAR, FIRST SEMESTER.

Pharmacy, Course B, <i>Preparations</i> , . . . . .	10	90	360
Organic Chemistry, Course A, . . . . .	5	90	
Pharmacognosy, Course C, . . . . .	2	36	
Pharmacog., Course D, <i>Materia Medica</i> , . . . . .	3	54	
	<hr/>	<hr/>	<hr/>
Total for First Semester, . . . . .	20	270	360

#### SECOND YEAR, SECOND SEMESTER.

Pharmacog., Course F, <i>Materia Medica</i> , . . . . .	2	36	
Organic Chem., Course D, <i>Analysis</i> , . . . . .	5	54	180
Pharmacognosy, Course E, . . . . .	2	36	
Mineralogy, Course A, <i>Crystallography</i> , . . . . .		6	12
Pharmacy, Course C, <i>with Prescription Practice</i> , . . . . .	4	72	
Investigations, average, . . . . .	5		180
	<hr/>	<hr/>	<hr/>
Total for Second Semester, . . . . .	18	204	372
Totals of required work, . . . . .	72	870	1524
		<hr/>	<hr/>
Hours in laboratories and lectures, . . . . .			2,394

\* "Hours of Credit" are the number of exercises *per week* for one semester.  
See page 12.

## 2. *With the Degree of Bachelor of Science in Pharmacy.*

[For requirements of college entrance, see page 10.]

[For the advisory sequence of studies, see page 21.]

### *Required Studies.—*

In English—[Courses 1 and 1a]—*four hours of credit.*

In German—(a) for those who entered *without* German, *eight hours of credit*; or (b) for those who entered *with* German, *four hours.*

In French—(a) for those who entered *without* French, *eight hours of credit*; for those who entered *with* French, *four hours.*

In Mathematics—[Courses 1a and 2a]—*seven hours of credit.*

In Physics—[Course 1]—*five hours of credit.*

In General Chemistry—(a) for those who enter *without* Chemistry, Courses A and B, *seven hours*; or (b) for those *with* Chemistry, Course B, *four hours.*

In Mineralogy—Course B, *two hours of credit.*

In Organic Chemistry—Course C, *five hours* in addition to Courses A and D.

All the studies *required for graduation as Pharmaceutical Chemist*, except Courses AA and C in General Chemistry, and Course A in Mineralogy, and amounting to *sixty-three hours of credit.*

### *Elective Studies.—*

From these as offered in the School, and in the University, the student must choose, with the approval of the Faculty, and complete enough including those above prescribed to make in all *one hundred and twenty hours of credit.*

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## THE LIBRARY, BOOKS OF REFERENCE, AND TEXT-BOOKS.

The School provides an extensive library, the main portion of which is shelved and indexed in the General Library Building of the University. The entrance to the Library is within one hundred feet of the entrance to the main building of the School of Pharmacy. The Library is open to readers twelve and one-half hours daily except Sundays and legal holidays during the collegiate year, and six hours daily during the three months of the summer vacation.

The Library provides the complete sets of the journals, the original repositories of the sciences related to pharmacy, as well as the current periodicals of the profession,

encyclopædias and hand-books of chemistry and pharmacy, and the latest works of value in study. The works of reference in use in the School may be estimated at near four thousand volumes. The medical library in the same building, numbers 5,774 volumes, besides unbound pamphlets. In all the general library contains 74,355 volumes and 15,242 unbound pamphlets.

A working Library is also provided, in a reading alcove of the Chemical Building, with several hundred works of immediate reference, duplicates of those in the General Library. These works are in constant use by students for reference reading upon their laboratory work and in preparing for their recitations.

The files of current numbers of the journals of pharmacy of the United States are provided in the Museum of the School, accessible to all students.

The Class Text-books of the School, those which the student should obtain for himself, can be obtained in the book-stores in this University town at rates lower than those customary in the general trade of the large cities. These text-books include the following: In General Chemistry, Freer. In Qualitative Analysis, Prescott and Johnson. In Pharmacy, the U. S. Pharmacopœia, and Coblenz. In Botany, Bastin. In Pharmacognosy, Flückiger. In Materia Medica, Sayre. In Organic Chemistry, Bernthsen. In Organic Analysis, Prescott.

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### THE MUSEUM.

This comprises collections in educational chemistry, the chemical industries, pharmacy, and pharmacognosy. It occupies a floor space of 2,500 square feet in the chemical building, and is provided with permanent cases.

The principles of chemical science are illustrated by groups of synthetic products, as progressive formations, and by related compounds, both natural and artificial.

The chemical industries are represented by collections of the materials and the successive products of manufacture, and the resources and methods of industrial art. The outlines of chemical technology are presented with models and plans, giving object lessons in the modern production of alkalies and acids, dyes and pigments, soaps, distillates, etc.

In pharmacognosy, the collection of medicinal plants in extensive and well chosen for instruction both in botany and in commercial history. This collection is being rapidly enriched from all parts of the world. It is used in connection with the series of working samples in daily use in the classes. The crude drugs are displayed in comparison with their active constituents, each in its proportional quantity.

Pharmacy is exemplified in the preparations of the pharmacopœia, the national formulary, and the appliances of skillful manipulation.

Of all these collections a good share originates in the work of students engaged in special lines of study and research.

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### FEES AND EXPENSES.

THE MATRICULATION FEE is \$10 for residents of Michigan, and \$25 for others. It is paid but once and gives privileges of permanent membership in any Department of the University.

THE ANNUAL FEE is \$30 for residents of Michigan, and \$40 for others. It is paid the first year, and each year thereafter.

In the Chemical Laboratory the student pays by account for the chemicals and apparatus which he uses. The expense varies with prudence and economy, the average amount being about one dollar and twenty cents per week. Advance payment is required from time to time; the first deposit being twenty dollars.

At graduation there is a diploma fee of \$10.

Students obtain board and lodging in private families for from three to five dollars a week. Clubs are also formed, in which the cost of board is from one dollar and a half to two dollars and a half a week. Room rent varies from seventy-five cents to two dollars a week for each student. Students arriving in Ann Arbor can obtain information in regard to rooms and board by calling at the Steward's office.

### CORRESPONDENCE.

Letters of inquiry may be addressed to Professor A. B. Stevens, Secretary, or to the Dean of the School of Pharmacy, Ann Arbor, Mich.

### STUDENTS IN 1895-96.

#### HOLDER OF THE STEARNS FELLOWSHIP.

NAME.	RESIDENCE.
James W. T. Knox, Ph.C., Organic Chemistry.	<i>Ann Arbor.</i>

#### UNDERGRADUATES.\*

NAME.	DEGREE.	CREDIT.	RESIDENCE.
Ursa S. Abbott,	Ph.C.	12	<i>Clearport, O.</i>
James Willard Ames,	Ph.C.	34	<i>Williamsburg, Ky.</i>
Frederick James Austin,	Ph.C.		<i>Ann Arbor.</i>
Eva Albertie Taylor Bachelder,	Ph.C.		<i>St. Charles, Minn.</i>
John Sell Bachman,	Ph.C.		<i>Morrice.</i>
Frederick Jay Baringer,	Ph.C.		<i>Gould, O.</i>
Clarence Henry Baum,	Ph.C.	34	<i>Danville, Ill.</i>
George Woodbury Beisel,	Ph.C.		<i>Monroe.</i>
Evi Dunn Benjamin,	Ph.C.		<i>Pontiac.</i>
Hart Beyer,	Ph.C.		<i>Orange City, Ia.</i>
Norman Taylor Boggess,	Ph.C.		<i>Huntington, W. Va.</i>

\* The abbreviations in the column headed DEGREE indicate the degree for which the student is studying. Where no abbreviation is given, the student is pursuing miscellaneous studies without being registered as a candidate for a degree. The figures in the column headed CREDIT indicate the number of hours of work taken by the student prior to the beginning of the current academic year, 1895-96, and completed without conditions, or credited to him on advanced standing. By an hour of work is meant the equivalent of one exercise a week for one semester

John Henry Brown,	Ph.C.		<i>Wilmington, O.</i>
Walter Briggs Cady, Ph.C.,	B.S.	82	<i>Ypsilanti.</i>
Arthur Fremont Calerdine,	Ph.C.	34	<i>Minerva, O.</i>
Andrew C. Christenson,	Ph.C.		<i>Ludington.</i>
James William Cobb,	Ph.C.		<i>Birmingham.</i>
Milo Cornwall,		10	<i>Denver, Col.</i>
Otis Adams Critchett,	Ph.C.		<i>Ann Arbor.</i>
John Wesley Derry,	Ph.C.	26	<i>Baltimore, Md.</i>
Oscar Conrad Diehl, Ph.G.,			
<i>Buffalo Coll. of Phar.,</i>	Ph.C.	41	<i>Buffalo, N. Y.</i>
George Lee Downing,	Ph.C.		<i>Lima, O.</i>
Charles Francis Drake, Ph.C.,	B.S.	63	<i>Chicago, Ill.</i>
Arthur Ernest Fox,	B.S.		<i>Topeka, Kan.</i>
Edward Cumberford Frank,	Ph.C.		<i>Toledo, O.</i>
Hubert Oscar Gerding,			<i>Glandorf, O.</i>
Henry Hermann Gerkensmeyer,			<i>Toledo, O.</i>
Charles Dwight Goff,	Ph.C.		<i>Fremont, Neb.</i>
Oscar William Gorenflo,	B.S.		<i>Detroit.</i>
Edward Sherman Gott,	Ph.C.		<i>Fort Madison, Ia.</i>
Arthur Luke Green,	Ph.C.		<i>Port Clinton, O.</i>
John Hartz,	Ph.C.	8	<i>College Point, N. Y.</i>
George Millard Heath,	Ph.C.	37	<i>Milan.</i>
Perley Willis Hickman,	Ph.C.		<i>Nelsonville, O.</i>
Frank Carleton Hitchcock,	Ph.C.	34	<i>Plainwell.</i>
Charles Ralph Horton,	Ph.C.	37	<i>Northville.</i>
Charles Willis Johnson,	Ph.C.	37	<i>St. Joe Station, Ind.</i>
Raymond Edward Kanouse,			<i>Manistee.</i>
George E. Lohrstorfer,	Ph.C.	20	<i>Port Huron.</i>
John William Lutes,	Ph.C.	17	<i>Richmond.</i>
Fred C. Manchester,			<i>Port Huron.</i>
Willard Jay Merrill, A.B.,			
<i>Lawrence Univ.,</i>	Ph.C.		<i>Appleton, Wis.</i>
Harry E. Moore,			<i>Ypsilanti.</i>
Clara Ella Nichols,	Ph.C.		<i>Beach City, O.</i>
Robert James Nisbet,	Ph.C.	34	<i>Chicago, Ill.</i>
Walter Adams Nivling,	Ph.C.		<i>Sioux City, Ia.</i>
William Henry Noll,	Ph.C.		<i>Fort Wayne, Ind.</i>
Edwin James Fuller Ostrander,	Ph.C.	34	<i>London.</i>
Arthur Thomas Paull,	Ph.C.		<i>Calumet.</i>
Harry Benjamin Phelps,			<i>West Bay City.</i>
S. Agnes Rich,	Ph.C.		<i>Traverse City.</i>
John Richmond,	Ph.C.		<i>Mt. Pleasant.</i>
Sara Esther Richter,	Ph.C.		<i>Bethany, Mo.</i>

William Nelson Richter,			<i>Huntington, Ind.</i>
Georgia G. Robinson,	Ph.C.		<i>Battle Creek.</i>
Harry David Rumps,	Ph.C.		<i>Battle Creek.</i>
Isidore Sanders,	Ph.C.	34	<i>Trinidad, Col.</i>
Philip Schaupner,	Ph.C.		<i>Little Rock, Ark.</i>
Edward Louis Schmitt,	Ph.C.	34	<i>Rochester, N. Y.</i>
Walter Scotten,			<i>Detroit.</i>
Harry Theophilus Smith,	Ph.C.	45	<i>Vincent, Pa.</i>
Richard John Stephany,	Ph.C.		<i>Rochester, N. Y.</i>
Alice M. Stevens,	Ph.C.		<i>Evansville, Wis.</i>
Harry Schellhous Stoddard,	Ph.C.		<i>Monroe.</i>
Amos Dorwin Sturgis,	Ph.C.	14	<i>Sturgis.</i>
Dan Gardner Swannell,	B.S.	60	<i>Champaign, Ill.</i>
Roland Bert Taber,	Ph.C.	34	<i>Benton Harbor.</i>
Henry Wright Taylor, B.S.,			
<i>Earlham College,</i>	Ph.C.	37	<i>Bowling Green, Ky.</i>
S. Edward Thompson,	Ph.C.		<i>Georgetown, Ky.</i>
Miles Lucius Trowbridge,	Ph.C.	34	<i>Syracuse, N. Y.</i>
Milton Lyman Trowbridge,	Ph.C.	34	<i>Syracuse, N. Y.</i>
John Walter Van Horn,	Ph.C.		<i>Omaha, Neb.</i>
Charles August Fred von Walt-			
hausen,	Ph.C.	34	<i>Bay City.</i>
Charles Franklin Watkins,	Ph.C.	13	<i>Reed City.</i>
Clarence Albert Weaver,	Ph.C.	34	<i>Utica, N. Y.</i>
John Evans Wells,	Ph.C.		<i>Weston, Mo.</i>
Oscar Charles Wheeler,	Ph.C.		<i>Ann Arbor.</i>
George Purdy Wilder,	Ph.C.	35	<i>Albion.</i>
Elisha Bird Williams,	Ph.C.	27	<i>Ann Arbor.</i>
Frank Howard Wilson,	Ph.C.	34	<i>Virginia, Ill.</i>
Edward Chancey Worden,	Ph.C.	45	<i>Ypsilanti.</i>
Frank Yott, Jr.,	Ph.C.	31	<i>Midland.</i>
George Frank Zerzan,	Ph.C.		<i>Schuyler, Neb.</i>



## Register of Alumni.

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The Chemical Laboratory of the University opened to students in 1856. A course in operative pharmacy was added to the laboratory curriculum in 1860, and was held open to those who had completed at least one of the chemical courses. From the first the laboratory was provided for the use of students of all Departments of the University, so far as chemical studies enter into the curriculum of each, and this provision in common for all the departments has continued to the present. From 1860 to 1868 Certificates of Proficiency were granted to students of any department who had completed with credit one or more of the laboratory courses of experimental study and had passed the chemical examinations. Of those who received the certificates some have followed chemistry as a profession, and their names so far as known are given with residence and occupation in the Alumni Register of Practicing Chemists of the University.

The laboratory course in operative pharmacy had been taken by students of the Department of Medicine, students of the Department of Literature and Science, and by special chemical students, for eight years, and to the number of one hundred and twenty-one persons, before the organization of a Department of Pharmacy. Of these early students of chemistry and pharmacy a directory of residence and occupation cannot now be given.

The School of Pharmacy was organized in 1868, at first as a polytechnic division of the Department of Literature, Science and the Arts. The charter of the School, and its power as a college of pharmacy to confer degrees;

rest upon (1) the acts of the Regents of the University in 1868 and 1876, sustained by (2) the laws of the State in 1851, and (3) the Constitution of Michigan, in accord with the act of Congress providing for the admission of the State. The degree of Pharmaceutical Chemist, with the diploma of graduation in pharmacy, was first conferred in 1869.

The Register of Alumni contains the names of all graduates in pharmacy at the University, 1869 to 1895, and does not include any others. The collegiate honors named in the Register are those held in addition to the degree of Pharmaceutical Chemist (Ph.C.)

In the Register a proprietor in pharmacy is designated as a "pharmacist" only; a joint-proprietor as a "pharmacist in the company of" the house designated; and one employed in pharmacy is recorded as "with" the proprietor named.

It is desired that errors or deficiencies in the Register, especially such as concern residence and occupation, shall be immediately reported with information to the Secretary of the Department. The kind services of Alumni are solicited in the endeavor to keep the registration as complete as possible. A mark of interrogation (?) following any name is given as a request for the postoffice address.

#### THE ALUMNI REGISTER FROM 1869 TO 1895.

This complete directory of the graduates, their present residences, occupations, positions, etc., revised in 1895, is issued separately. It will be furnished free of charge on application to the Secretary, Prof. A. B. Stevens, Ann Arbor, Mich.

The Register of the Graduates of 1895, and a list of changes of address, etc., of all alumni during the past year, is given in this Announcement.

The Alumni Register will continue to be kept in revision and publication as heretofore, but will be issued separately.

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## OTHER CATALOGUES OF GRADUATES AND STUDENTS.

A Catalogue of Chemists, revised from time to time, is furnished to applicants. It is a professional catalogue of practicing chemists and teachers in chemistry who have been educated at this University. The "General Catalogue of Officers and Students of the University," 1837 to 1890. 472 pages, price \$1.75 in cloth, can be obtained by addressing the Steward of the University. Besides the names of the Graduates, it contains the names of Non-Graduate Students in the School of Pharmacy; to the number of 277, with the records of their residence and occupation so far as obtained.

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## GRADUATES WITH THE DEGREE OF PHARMACEUTICAL CHEMIST.

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College degrees held in addition to that of Ph.C. are given, with the year when they were conferred, after the names of graduates who have received them.

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### 1895.

HENRY JOHN BOWERFIND.—Pharmacist with Meyer Bros., Fort Wayne, Ind.

CLAUDE MELNOTTE BUNN.—In firm of Bunn & Poel Drug Co., 202 W. Main st., Kalamazoo, Mich.

CORNELIUS DE JONGE.—Pharmacist with A. H. Lyman Co., Manistee, Mich.

GEORGE DOEHNE, Jr.—Pharmacist with A. T. Hall, 428 Wabash st., St. Paul.

GILBERT ALLEN DOTY.—Pharmacist with Doty Bros., 284 Warren ave. W., Detroit, Mich.

CHARLES FRANCIS DRAKE.—Graduate Student in studies for B.S. in Pharmacy.

HENRY ALBERT HERZER.—Pharmacist with John Moore, Ann Arbor, Mich.

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- JOHN N. JUDY.—Pharmacist for Queen City Pharmacy, Cumberland, Md.
- EDGAR LIVINGSTONE KNAPP.—Pharmacist with Doak & Orrison, Springport, Mich.
- JAMES W. T. KNOX.—Holder of the Stearns Fellowship, 1895–97.
- ELGIN MALLET.—Pharmacist with Nelson Mallett, Trenton, Mo.
- FAY MELVILLE MARSH.—Pharmacist with E. C. Haynes, Davison, Mich.
- GARRY WINDSOR MESSINGER.—Manager of Plainfield ave. Pharmacy for L. A. Foote, M.D., 240 Plainfield ave., Grand Rapids, Mich.
- ERNEST GRAY REESE.—Pharmacist for Lincon's Pharmacy, Bowling Green, Ohio.
- CHARLES HENRY STEINCAMP.—Pharmacist. 721 Utica st., Toledo, Ohio.
- WILBER JOHN TEETERS.—B.S., *Mount Union Coll.*, 1893. Demonstrator of Chemistry Medical Department, State University of Iowa, Iowa City.
- EDWARD EUGENE WASHBURN.—With Washburn & Skinner, New London, Ohio.
- JOHN LEWIS WASHBURN.—Pharmacist with E. E. Calkins, Ann Arbor, Mich.
- HORACE HOUGHTON WATERS.—In the study of Medicine, Univ. Mich.

#### CHANGES.

- ATWOOD, DANIEL W.—1892. Pharmacist with French st. Pharmacy, N. E. cor. 10th and French sts., Wilmington, Del.
- BARNHART, CLARENCE E.—1894. Pharmacist with Woolf's Pharmacy, 801 Lincoln ave., Peoria, Ill.
- CADY, WALTER B.—1892. Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y., until 1885. Graduate student in studies for B.S., in Pharmacy.
- CLARK, EDWARD W.—1886. Ph. G. New York College of Phar., 1884. Pharmacist some time at 24 East Main st., Amsterdam, N. Y. Died at Ann Arbor, Mich., Jan. 4, 1896.
- CROMAN, JOSEPH M.—1887. M. D. Detroit College of Med. 1892. Physician, Mt. Clemens, Mich.
- DAVOLL, DAVID LAKE, JR.—Assistant in Qualitative Analysis, and graduate student in chemistry University of Michigan. Assistant chemist in the research laboratory of Parke, Davis & Co., 1895–96. Instructor in Organic Analysis in the Faculty of the School of Pharmacy.

- FLINT, MERRILL S.—1889. Formerly Pharmacist in charge of the drug department of the Chateauquay Ore and Iron Co., Lyon Mountain, N. Y. Salesman with H. C. Hulbert & Co., Wholesale Paper and Paper Mill Supplies, 53 Beekman st., New York City.
- GIBSON, WALTER MCQ.—1883. Resident graduate of the University in 1884. Pharmacist, Portsmouth, Ohio. Address for 1896-97. Los Angeles, Cal.
- HAVENHILL, L. D.—1893. Phar. M., 1894. Assistant in Pharmacy and Pharmacognosy, University of Michigan, 1893-94. Analytical chemist with Dr. A. B. Lyon, Honolulu, H. I., 1895-96. Chemist for the Refining and Smelting Works, Aurora, Ill.
- HILL, CHARLES OTIS.—1893. A.B. University of Tennessee. Assistant Chemist U. S. Food investigation at Univ. of Tenn. Knoxville, Tenn. Address, 1008 Rose ave.
- HIRTH, GEORGE J., JR.—M.D. 1891. C. M., Univ. of Berlin, '92. Physician, No. 66 Fargned ave., Milwaukee, Wis. Professor of Histology and Lecturer on Principles of Surgery and Assistant to Chair of Surgery of the Milwaukee Medical College and School of Dentistry.
- JACKSON, GEORGE R.—1892. A.B. Oberlin College. Pharmacist, 111½ Braler st., Memphis, Tenn. Professor of Chemistry in Collegiate Department of St. Augustine School, 1894-95.
- McGEE, THOMAS H.—1891. Pharmacist, Farmington, Mich.
- MURDOCK, THOMAS E.—1894. Pharmacist in the firm of Murdock Bros., Northville, Mich.
- NICHOLS, MARION F.—1894. Pharmacist with Valley City Pharmacy, 75 Canal st. Residence, 228 E. Bridge st., Grand Rapids, Mich.
- O'CONNOR, DELIA.—1894. Pharmacist with E. E. Calkins, Ph.C. 1884. Ann Arbor, Mich.
- SHERER, WILLIAM.—1893. Pharmacist with the Payne Drug Co. Wholesale and Retail, 24-26 East Main st. Rochester, N. Y.
- SHEPHERD, FRANK I.—1891. A.B. Sanford Univ., Cal., 1895. Some time Assistant Chemist with the William S. Merrill Chemical Co., manufacturers, Cincinnati, Ohio. Chemist Glycerine Department, Globe Soap Works Co., Cincinnati, O.
- SMITH, MARIE R.—1888. M.D. Hahnemann Med. Col. 1894. For some time in Hollands Pharmacy, cor. 55th and Madison ave., Chicago. Physician and Surgeon, N. E. cor. Garfield Boulevard and Madison Ave., Hyde Parke, Chicago, Ill. Professor of Anatomy and Histology, International Medical Mission College.

**SNOW, HERBERT W.**—Formerly analytical chemist for the manufacturing laboratory of Frederick Stearns & Co., Detroit, Mich. Member Am. Phar. Assoc., Mich. State Phar. Assoc., and Detroit Phar. Assoc. Member of the Convention of Revision of U. S. Pharmacopoeia, 1890. In the firm of Snow, Lund & Co., wholesale and retail druggists, Omaha, Neb., until 1896.

**SELTZER, LEONARD A.**—Pharmacist, F. W. R. Perry, (Ph.C., 1880). 709 Woodward Ave., and Shurly Bl'd., Adams Ave. W., Detroit, Mich.

**VAN ZWALUWENBURG, A.**—1887. Assistant in pharmacognosy and pharmacy in the University of Michigan in 1887-88. Chemist for the St. Louis Ore and Steel Co., South St., Louis, Mo. Consulting Chemist, San Louis, Potosi, Mex.

# Index to Name of Graduates.

WITH YEAR OF GRADUATION.

Abbey, C. C.	'89	Boehme, C. A.	'78
Adams, Alfred W.	'71	Boetcher, C. V.	'89
Adams, Arthur W.	'91	Boise, E. P.	'62
Alcorn, G. S.	'86	Boughton, E. G.	'76
Adler, S. W.	'83	Bowdish, G. A.	'89
Allen, C. P.	'88	Bowen, R. F.	'79
Allen, Harris E.	'92	Bowen, T. W.	'89
Allen J. A.	'81	Bower, F. T.	'76
Allen, S. E.	'76	Bowerfind, H. J.	'96
Allison, C. W.	'88	Boyce, S. R.	'90
Allmand, C. W.	'84	Boyd, J. P.	'73
Allmendinger, C. G.	'82	Braddock, O. L.	'71
Allshouse, H. A.	'89	Briggs, Perry	'91
Allworth, J. E.	'89	Brockmeier, J. H.	'82
Amerman, A. S.	'71	Brooks, F. A.	'78
Ames, J. H.	'76	Brown, J. G.	'73
Ando, Shinichi	'91	Buchanan, W. A.	'70
Armstrong, I. A.	'79	Buckham, A. J.	'86
Armstrong, R. B.	'90	Buckham, J. N.	'76
Armstrong, R. S.	'94	Bunn, Claude M.	'96
Arnold, C. F.	'69	Burgess, Homer	'91
Ashley, William F.	'91	Burke, W. H.	'84
Atwood, Daniel W.	'92	Burnett, C. J.	'72
Avery, J. H.	'77	Burroughs, C. S.	'76
Ayres, J. N.	'79	Burt, J. C.	'75
Babbitt, E. T.	'83	Cady, Walter B.	'92
Baert, G. H.	'90	Calkins, E. E.	'84
Bailey, F. C.	'81	Calkins, H. W.	'78
Baird, J. W.	'83	Campbell, Arthur	'91
Baker, C.	'87	Campbell, W. G.	'79
Baker, C. W.	'90	Carey, W. S.	'71
Baker, F. W.	'90	Carley, G. L.	'82
Banister, J. L.	'86	Carr, L. B.	'87
Bancroft, R. B.	'81	Carssow, Rudolph B.	'92
Barie, H. L.	'87	Cary, J. C. W.	'70
Barnhart, C. E.	'94	Case, E. T.	'84
Barnabee, H. S.	'83	Case, M. T.	'69
Barry, B. T.	'89	Case, T. G.	'70
Bassett, E. C.	'83	Chamberlain, F. J.	'89
Baum, C. M.	'75	Chapel, Fred Newton	'93
Baumhardt, A. J.	'87	Church, S. K.	'89
Beach, L. F.	'76	Church, W. D.	'79
Beal, E. R.	'87	Churchill, Alfred P.	'91
Becker, C. L.	'81	Churchill, O. L.	'76
Benton, Lou Newton	'93	Cirkler, C. H.	'81
Berry, Robert W.	'91	Clark, E. W.	'86
Bird, Harry L.	'91	Clark, F. M.	'85
Birkmier, Harry W.	'92	Clark, G.	'82
Bliss, H.	'69	Clark, J. B.	'80
Block, L. H.	'89	Clark, J. T.	'76
Bloomfield, E. M.	'69	Coad, N' G. O.	'75
Blum, E.	'84	Cody, Bert E.	'92
Bodeman, F. E.	'73	Coffin, C. L.	'84
Boden, E. T.	'80	Cole, W. W.	'79

Coleman, Sheldon.....	'93	Ellis, L. A.....	'87
Collins, C. F.....	'72	Emanuel, Julia E.....	'89
Collins, W. E.....	'90	Epley, A. W.....	'94
Condon, W. D.....	'86	Ewell, E. E.....	'88
Conrad, J. F.....	'84	Ewell, H. P.....	'85
Conrads, J. R.....	'86	Ewing, F.....	'70
Cook, Amosa D.....	'92	Faber, Fred.....	'93
Cook, G. S.....	'73	Farnum, L.....	'94
Cooke, F. A.....	'83	Fasquelle, L. J.....	'82
Cooper, W. H.....	'84	Fellows, C. A.....	'80
Corbin, John W.....	'91	Felt, G. H.....	'86
Cotton, R. M.....	'74	Field, E. C.....	'83
Coughlin, J.....	'76	Finley, W. E.....	'79
Covert, S.....	'69	Fischer, Richard.....	'92
Craig, J. T.....	'84	Fitch, H. A.....	'71
Crampton, C. A.....	'82	Flanders, A. G.....	'85
Crampton, C. B.....	'71	Flick, O. C.....	'71
Crane, K. (Mrs. Johnson).....	'74	Flint, M. S.....	'89
Croman, J. M.....	'87	Foote, C. E.....	'80
Crombie, S. M.....	'82	Ford, C. E.....	'70
Crowley, C. F.....	'89	Ford, J. M.....	'69
Cunningham, H.....	'82	Fox, A. L.....	'69
Cunningham, T. N.....	'85	Frank, H. O.....	'83
Curtis, A. C.....	'70	Franz, H. S.....	'89
Cushing, G. M.....	'84	Frazee, F. H.....	'84
Cushman, H. DeP.....	'69	Fritts, F. F.....	'74
Damon, B. W.....	'83	Fromm, John David.....	'93
Damon, W. E.....	'84	Frost, H. J.....	'89
Daniels, G. B.....	'86	Fuller, L. C.....	'76
Davis, Frank F.....	'91	Gage, C. T.....	'79
Davis, C. L.....	'85	Gardner, L. H.....	'84
Davis, L. M.....	'74	Gatchell, E. E.....	'81
Davoll, David Lake Jr.....	'93	Gates, W. H.....	'77
Dawson, B. F.....	'79	Gebauer, C. J.....	'80
Dawson, G. V.....	'84	Geddes, A. B.....	'85
Dawson, J. H.....	'83	Geddes, Lillian M.....	'93
Dean, G. E.....	'82	Geisler, J. F.....	'80
De Jonge, Cornelius.....	'95	Gentsch, G. T.....	'71
Denison, J. J.....	'82	George, E. L.....	'69
Denny, J. D.....	'83	Gessler, M.....	'82
Deyo, L. H.....	'82	Gibson, E. D.....	'78
Dickinson, O. B.....	'75	Gibson, W. M.....	'83
Dietrick, C. W.....	'76	Glazier, F. P.....	'80
Dilworth, M. (Mrs. Comly).....	'82	Godfrey, C. P.....	'84
Dingley, C. A.....	'76	Goecker, L.....	'82
Dixon, G. F.....	'77	Goetter, F. B.....	'83
Dodd, C. W.....	'82	Goodrich, L. A.....	'82
Doehne, George Jr.....	'95	Gower, A. C.....	'70
Doehne, W. H.....	'87	Graham, Abner B.....	'93
Dothany, W. A.....	'87	Graham, J. B.....	'71
Doty, Gilbert Allen.....	'95	Greaves, Edith E.....	'91
Doty, J. W.....	'86	Green, Frank A.....	'91
Doty, W. P.....	'86	Green, M. U.....	'76
Douglas, S. T.....	'74	Greene, A. L.....	'82
Drake, Charles Frances.....	'95	Gries, Joseph M.....	'91
Drake, Fred D.....	'92	Griffen, T.....	'89
Dryfoos, L. A.....	'87	Griffith, W. F.....	'77
Duncan, C. G.....	'74	Griggs, O.....	'75
Dunn, J. S.....	'85	Grimwood, C.....	'76
Dunn, W. L.....	'89	Grochau, E. A.....	'94
Dupont, R. S.....	'87	Gunder, S. H.....	'81
Eastwood, J. F.....	'74	Gundrum, G.....	'76
Eaton, H. K.....	'86	Guy, O. G.....	'70
Eaton, J. M.....	'79	Haag, Elliott H.....	'92
Eaton, Mattie.....	'84	Hagle, P. N.....	'70
Eberbach, W. F.....	'88	Haigh, C. T.....	'86
Eddy, C. H.....	'76	Haigh, D. L.....	'85
Egeroff, A. (Mrs. Fuller).....	'78	Hale, A. K.....	'73
Ehrhardt, H.....	'74	Hall, G. C.....	'83



Hallock, A. A.	'77	Jarvis, J. W.	'69
Hance, S. S.	'87	Jensen, P. C.	'79
Harrington, Harriet L.	'81	Jenter, C. G.	'89
Harris, B. A.	'77	Jewett, H. S.	'70
Harvey, C. B.	'84	Johnson, B. L.	'89
Harvey, G.	'74	Johnson, C. S.	'75
Hasbrouck, W. A.	'78	Johnson, J. S.	'77
Hatch, H. F.	'70	Johnson, Marion E.	'77
Hauck, T.	'77	Johnson, O. C.	'71
Hauenstein, W.	'83	Johnston, J. J.	'77
Havenhill, L. D.	'93	Jones, A. A.	'82
Hawes, G. S.	'90	Jones, G. (Mrs. Cuscaden)	'74
Hawley, E. P.	'79	Jones, J. H.	'94
Hawkes, R. E.	'88	Jones, J. R.	'90
Heard, Mary K.	'92	Jones, M. A.	'87
Hearne, Joseph C.	'91	Josenhans, R. J. C.	'82
Heath, R. M.	'89	Judson, F. E.	'80
Heim, H.	'78	Judy, John N.	'95
Heim, W.	'82	Kahn, Harry	'91
Heimbach, S. J.	'79	Kebler, L. F.	'90
Heister, C. W.	'78	Keith, F. R.	'89
Henderschott, F. E. (Mrs. Henning)	'87	Kelly, J. P.	'79
Henning, E. L.	'69	Kelly, M. C.	'71
Henning, F. J.	'87	Kelly, Wm. A.	'92
Henry, G. C.	'74	Kennedy, E. J.	'82
Herzer, H. A.	'95	Kennedy, Edward M.	'91
Hesse, B. C.	'89	Kerley, A. P.	'77
Higgins, G. E.	'70	Kidder, S. Jr.	'88
Higley, W. K.	'83	King, Joseph C.	'91
Hill, Charles Otis	'93	Kirby, M. S.	'90
Hirth, G. J. Jr.	'89	Kirby, T. E.	'90
Hirth, P. H.	'86	Kirchgeßner, W. C.	'89
Hitchcock, John E.	'91	Kirchmaier, G. A.	'83
Hoehn, J.	'82	Kirk, D.	'77
Hoffman, A. G.	'84	Klein, Julius M.	'92
Hoge, W. B.	'84	Klingmann, T.	'90
Hollan, L. H.	'69	Knapp, E. L.	'95
Hollis, C. W.	'90	Knapp, L. B.	'81
Holloway, W. J.	'76	Knapp, V.	'77
Holthoeffer, H. J.	'83	Knox, S. R.	'94
Hood, C. H.	'69	Knox, James W. T.	'95
Hopper, A. G.	'84	Koehnle, O. H.	'78
Hopper, C. H.	'75	Koon, C. S.	'83
Horine, D. P.	'88	Koons, C. W.	'79
Hosack, H. E.	'83	Kramer, L. G.	'89
Houghton, P. S.	'79	Krause, B. S.	'87
Houghton, E. M.	'93	Krug, W. H.	'89
Howell, C. C.	'70	Kuhlman, E.	'74
Hower, Phil. G.	'92	Lake, C. N.	'84
Hubbard, F. J.	'77	Landers, Alfred E.	'92
Hubbard, John L.	'91	Lauer, B. J.	'85
Hubbard, T. H.	'82	Leamon, G. P.	'84
Huber, L. H.	'90	Ledman, O. S.	'83
Hudson, C. H.	'74	LeFevre, E. L.	'83
Hudson, H. H.	'94	Leisenring, W.	'87
Hueber, C. F.	'84	Leist, J. L.	'75
Huested, Frank P.	'91	Levy, H.	'88
Huhn, C. H.	'81	Levy, M. M.	'90
Humiston, K. P.	'77	Lewis, D.	'77
Huntington, H. N.	'74	Lilly, E. A.	'80
Huntsman, A.	'74	Little, J. R.	'76
Ilhardt, W.	'90	Lobb, A. S.	'77
Irwin, J. L.	'80	Lockwood, W. S.	'89
Jackman, W. F.	'87	Logan, R.	'77
Jackson, Charles Elsworth	'93	Lohman, G. H.	'70
Jackson, George R.	'92	Lohrstorfer, Joseph	'92
James, H. F.	'76	Long, W. L.	'77
Janney, R. L.	'89	Longstaff, C. H.	'82
Jarman, E. M.	'90	Longwell, E. B.	'82

Lonstorf, G. J.	'80	North, S. J.	'85
Loomis, J. H.	'81	Oaks, J. F.	'69
Loudenbeck, Harry C.	'91	Obermann, R. F.	'83
Lovin, C. C.	'81	O'Connor, Delia.	'94
Lupinski, H.	'78	Oechsler, A.	'88
Lynn, J.	'76	Oles, F. R.	'82
Maas, F. N.	'80	Orth, L. P.	'79
Mallett, Elgin.	'95	Osborne, D. E.	'79
Maltbie, W. F.	'65	Ostrander, R. H.	'83
Mann, A.	'80	Palmer, G. H. M.	'82
Marsh, Fay M.	'95	Palmer, W.	'90
Marshall, E. H.	'87	Palmer, H.	'85
Marshall, E. S.	'80	Parker, A. S.	'79
Martzloff, C. E.	'90	Parker, C. E.	'85
Massey, F. W. H.	'76	Parker, F. C.	'81
Massey, S. F.	'71	Parker, R. J.	'85
Maxwell, J. C.	'94	Parkill, S. E.	'77
McCarthy, R. H.	'73	Parrott, B. E.	'81
McCrilles, J. E.	'85	Parsons, C. W.	'81
McCrea, H. F.	'81	Parsons, H. B.	'76
McCullough, R. S.	'80	Parsons, James H.	'92
McGee, Thomas H.	'91	Passolt, H. A.	'38
McGregor, J. C.	'94	Parkinson, F. E.	'89
McGuire, B. J.	'90	Pattinson, George H.	'92
McKimmie, W.	'70	Payne, C. E.	'80
McNeil, M. (Mrs. J. O. Reed).	'82	Pease, T. D.	'84
McNoah, Grace E.	'94	Peck, F. J.	'91
Mead, A. H.	'94	Pengra, C. P.	'83
Mehlhop, F. W.	'89	Pennington, J. E.	'88
Meinert, G.	'86	Perry, F. W. R.	'80
Melcher, A. B.	'85	Pett, W. F.	'85
Melville, J. E.	'85	Peyton, C. S.	'84
Meredith, E. E.	'82	Phillips, D. A.	'71
Merkel, Charles W.	'93	Pierce, Bessie Gillespie	'93
Merrell, A. F.	'71	Pierron, J. J.	'76
Merrell, O. A.	'70	Post, M. E.	'77
Merrett, F. D.	'80	Powell, J. Z.	'71
Messinger, G. W.	'95	Prentice, F. F.	'72
Meyer, T. F.	'78	Pryer, C. E. (Mrs. Bartlett)	'82
Meyer, O. P.	'90	Pugh, F. B.	'74
Miller, Emerson R.	'92	Purtscher, C.	'90
Miller, T. W.	'86	Pusch, Oscar C.	'92
Miller, J. J.	'78	Quayle, W. T.	'81
Milner, T. J.	'90	Ranke, W. F., Jr.	'85
Miner, M. A.	'71	Ransom, R. B.	'82
Mills, C. W.	'70	Raynale, F. B.	'88
Mitchell, A. S.	'87	Reed, E. M.	'77
Moody, L. W.	'78	Reese, E. G.	'95
Moore, S. S.	'71	Reeve, J. C.	'80
Moore, L. G.	'69	Reppert, F.	'72
Morgan, J. W.	'76	Reule, G. A.	'87
Morris, George A.	'93	Rex, R. G.	'69
Morris, J. E.	'82	Reyer, T.	'81
Morse, E. H.	'81	Rice, E. F.	'85
Moss, J. C.	'75	Rice, S.	'73
Moss, J. R.	'70	Riebe, C.	'84
Muir, J. D.	'84	Rieger, C. F.	'83
Mull, R. F.	'79	Risser, E. J.	'76
Mummery, A. E.	'85	Robertson, F. L.	'94
Murdock, T. E.	'94	Robinson, Thomas E.	'92
Murray, Benjamin L.	'91	Rockwell, M.	'89
Neal, J. C.	'69	Rockwell, O. M.	'82
Newman, I. N.	'70	Rodi, C. H.	'80
Newton, Welles B.	'83	Roe, J. O.	'70
Newton, W. E.	'70	Rogers, A. S.	'85
Nichols, M. F.	'94	Romans, E. J.	'83
Nickerson, Frederick H.	'93	Romig, S. V.	'70
Niermann, H. G.	'90	Rood, G. W.	'81
Noll, M.	'81	Roos, C. L.	'83

Rouse, W. H.	'69	Stevens, J. C.	'83
Rowland, C. W.	'89	Stevens, M. B.	'70
Royer, T.	'82	Stevens, R. H.	'77
Roys, H. M.	'76	Stevenson, W. E.	'84
Ruddiman, E. A.	'86	Steventon, G. C.	'94
Rudolph, Karl Edwin	'93	Stewart, T. M.	'76
Runyan, E. G.	'86	Stinson, E. L.	'82
Ruse, A. E.	'88	Stivers, E. S.	'86
Russell, Dorian M.	'91	St. John, W. I.	'84
Rutan, J. A.	'69	Stone, C. G.	'77
Sadler, A.	'69	Styles, M. D.	'71
Salls, J. H.	'75	Sutton, John B.	'92
Sandford, William E.	'92	Taylor, W.	'70
Scherer, O.	'86	Teeter, C. W.	'80
Scherer, William	'93	Teeters, W. J.	'95
Schettler, G. M.	'89	Tegarden, J. L.	'94
Scheuerman, W. M.	'90	Textor, O.	'81
Schlotterbeck, J. O.	'87	Thayer, H. A.	'90
Schmid, O. F.	'90	Thompson, C. W.	'81
Schmid, T.	'81	Thompson, F. A.	'81
Schmidt, L. W.	'83	Thompson, J.	'89
Schmidt, S.	'81	Thompson, M. S.	'86
Schmidt, Walter K.	'91	Thornburgh, T. R.	'82
Schott, A. A.	'84	Thum, F.	'80
Schrage, W.	'74	Thum, H.	'78
Schumacher, A. C.	'84	Tibbals, W. J.	'90
Seiffardt, L. E.	'78	Todd, A. H.	'80
Seltzer, Leonard A.	'92	Thompkins, J. W.	'77
Senier, A.	'74	Topping, C. O.	'94
Sexton, W. A.	'81	Topping, G. B.	'87
Seymour, James	'94	Townsend, P. L.	'78
Shafer, C. M.	'83	Travis, F. A.	'84
Shanafelt, F. P.	'83	Tremain, H. A.	'75
Shaper, J. H.	'88	Tupper, E. A.	'85
Sheedy, John T.	'92	Turner, D. D.	'81
Sheffield, W. C.	'76	Turner, G.	'83
Shepard, O. E.	'74	Upjohn, A. (Mrs. Campbell)	'71
Shepherd, Frank I.	'91	Upjohn, M. (Mrs. Sidman)	'71
Sherrard, C. C.	'90	Van den Belt, N.	'82
Shubel, C. G.	'87	Vandivert, A. H.	'79
Shuler, D. P.	'87	Van Etta, H. S.	'86
Smith, A. W.	'85	Van Schoonhoven, Garrie G.	'91
Smith, A. D.	'78	Van Zwaluwenburg, A.	'87
Smith, C.	'84	Varnum, E. C.	'83
Smith, Carl Edward	'93	Vedder, F. F.	'86
Smith, E. D.	'86	Vogel, A. F.	'89
Smith, Henry F.	'91	Waggoner, A. T.	'84
Smith, J. H.	'77	Wagner, George	'93
Smith, Marie R.	'88	Wait, Cora L.	'90
Smith, O. J.	'89	Walker, A. L.	'79
Smith, S. W.	'76	Wallace, R. H.	'78
Snow, Henry P.	'91	Ware, E. J.	'88
Snow, H. W.	'84	Ward, R. M.	'81
Soetje, E.	'88	Warner, George J.	'92
Soetje, Oscar H.	'92	Warren, W. McK.	'87
Soyer, G. P.	'83	Washburn, Edward E.	'95
Spencer, E.	'78	Washburn, John L.	'95
Spencer, H. H.	'85	Waterman, C. N.	'88
Spencer, J. J.	'83	Waters, H. H.	'95
Spenger, L. J.	'89	Watson, Catherine M.	'76
Stabler, L. J.	'85	Watson, J. B.	'80
Staehle, W. C.	'75	Weaver, J.	'74
Standart, C. J.	'87	Weeks, E. J.	'70
Stanton, E. M.	'69	Wehrli, A. C.	'79
Stecher, H. W.	'78	Weightman, M.	'89
Stephenson, A. C.	'73	Wells, Joseph J.	'92
Steiner, S. G.	'85	Wells, W. H.	'75
Steincamp, Charles H.	'95	Wertz, S. G.	'93
Stevens, A. B.	'75	Wesener, J. A.	'88

Westfall, D. M.....	'90	Wise, C. H.....	'90
Wetzel, R. M.....	'84	Wise, P. E.....	'94
Wheeler, A. M.....	'81	Wiseman, F. D.....	'88
Wheelock, W. C.....	'89	Wolcott, W. A.....	'70
Whinery, J. B.....	'88	Wolf, F. C.....	'80
White, B. W. (Mrs. W. Hager).....	'83	Wood, C.....	'75
White, W. H.....	'82	Wood, H. R.....	'90
Whitman, A. C.....	'75	Wood, J. B.....	'89
Whitney, James W.....	'91	Wood, L. N.....	'79
Whitlark, W. J.....	'76	Worden, C. E.....	'78
Wickwire, F.....	'82	Wrampelmeier, T. J.....	'78
Wilbur, T. S.....	'73	Wurmb, T. H.....	'81
Wiley, C. D.....	'87	Wyckoff, W. C.....	'84
Wilhite, E. L.....	'84	Wyman, H. S.....	'77
Williams, C. H.....	'94	Young, A. V. E.....	'75
Williams, S. W.....	'81	Young, A. L.....	'77
Wilmarth, G. E.....	'75	Young, R. D.....	'90
Wilson, F. L.....	'79	Zeig, A. C.....	'89
Wilson, G. E.....	'78	Zerse, O. G.....	'82
Wilson, O. L.....	'81	Zwick, K. G.....	'88
Wilson, W. M.....	'71		

# Contents.

	PAGE.
The Faculty.....	5
ANNOUNCEMENT FOR 1896-97.....	7
Calendar.....	7
<i>Requirements for Admission:</i>	
To the College Course of Two Years.....	8
Of Students not Candidates for a Degree.....	10
To the College Course of Four Years.....	10
To Advanced Standing.....	12
<i>Courses of Instruction:</i>	
In Pharmacy.....	13
In Pharmacognosy and Materia Medica.....	14
In General Chemistry.....	15
In Analytical Chemistry.....	15
In Organic Chemistry.....	17
In Physiological Chemistry.....	18
In Pharmacology.....	18
In Mineralogy.....	19
In Physics.....	19
In Research.....	19
Fellowships.....	20
Succession of studies:	
In the Course of Two Years. ....	20
In the Course of Four Years.....	21
In Selected Studies.....	22
EXAMINATIONS.....	23
REQUIREMENTS FOR GRADUATION:	
<i>With the Degree of Pharmaceutical Chemist</i> .....	24
<i>With the Degree of Bachelor of Science in Pharmacy</i> .....	25
THE LIBRARY, BOOKS OF REFERENCE AND TEXT-BOOKS.....	25
THE MUSEUM.....	26
FEES AND EXPENSES.....	27
STUDENTS IN 1895-96.....	28
REGISTER OF THE ALUMNI OF THE SCHOOL OF PHARMACY, with present Residence and Occupation.....	31
INDEX TO NAMES OF GRADUATES, with year of graduation.....	37



UNIVERSITY OF MICHIGAN

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# SCHOOL OF PHARMACY

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ANNUAL ANNOUNCEMENT

AND

REGISTER OF ALUMNI

---

THIRTIETH YEAR, 1897-98

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ANN ARBOR, MICH.:

PUBLISHED BY THE UNIVERSITY

1897





UNIVERSITY OF MICHIGAN

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**THE COURIER PRESSES**  
**ANN ARBOR, MICH.**

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# BOARD OF REGENTS.

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**\*JAMES B. ANGELL, LL.D.,**

**PRESIDENT.**

**HARRY B. HUTCHINS, PH.B.,**

**ACTING PRESIDENT.**

		TERM EXPIRES.
HON. LEVI L. BARBOUR,	<i>Detroit,</i>	Dec. 31, 1897.
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HON. PETER N. COOK,	<i>Corunna,</i>	" 1899.
HON. HENRY S. DEAN,	<i>Ann Arbor,</i>	" 1899.
HON. HERMAN KIEFER,	<i>Detroit,</i>	" 1901.
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HON. GEORGE A. FARR,	<i>Grand Haven,</i>	" 1903.

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**JAMES H. WADE,**  
**SECRETARY AND STEWARD.**

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**HARRISON SOULE,**  
**TREASURER.**

---

**HON. JASON E. HAMMOND.**  
**SUPERINTENDENT OF PUBLIC INSTRUCTION.**  
(Office at Lansing.)

**\*Absent on leave.**

# UNIVERSITY OF MICHIGAN.

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## THE UNIVERSITY AND THE STATE.

THE University of Michigan is a part of the public educational system of the State. The governing body of the institution is a Board of Regents, elected by popular vote for terms of eight years, as provided in the Constitution of the State. In accordance with the law of the State, the University aims to complete and crown the work that is begun in the public schools, by furnishing ample facilities for liberal education in literature, science, and the arts, and for thorough professional study of engineering, medicine, pharmacy, law, and dentistry. Through the aid that has been received from the United States and from the State, it is enabled to offer its privileges, with only moderate charges, to all persons of either sex, who are qualified for admission. While Michigan has endowed her University primarily for the higher education of her own sons and daughters, it must be understood that she also opens the doors of the institution to all students, wherever their homes. It is in this broad, generous, and hospitable spirit, that the University has been founded, and that it endeavors to do its work.

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## ORGANIZATION OF THE UNIVERSITY.

The University comprises the Department of Literature, Science, and the Arts (including the Graduate School and the Summer School), the Department of Engineering, the Department of Medicine and Surgery, the Department of Law, the School of Pharmacy, the Homœopathic

Medical College, and the College of Dental Surgery. Each department, school, and college, has its special Faculty. The University Senate is a body representing all the faculties, and considers questions of common interest and importance.

In the Department of Literature, Science, and the Arts, different lines of study lead to the degrees of Bachelor of Arts, Bachelor of Philosophy, Bachelor of Science, Bachelor of Letters, the corresponding Masters' degrees, and the degrees of Doctor of Philosophy and Doctor of Science.

In the professional schools degrees are given as follows: In the Department of Engineering, the degrees of Bachelor of Science, Master of Science, Civil Engineer, Mechanical Engineer, and Electrical Engineer; in the Department of Medicine and Surgery, the degree of Doctor of Medicine; in the Department of Law, the degrees of Bachelor of Laws and Master of Laws; in the School of Pharmacy, the degrees of Pharmaceutical Chemist and Bachelor of Science; in the Homœopathic Medical College, the degree of Doctor of Medicine; in the College of Dental Surgery, the degrees of Doctor of Dental Surgery and Doctor of Dental Science.

Students in any department of the University may enter the classes in any other department, upon obtaining permission from the faculties of the respective departments.

# Faculty of the School of Pharmacy.

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\*JAMES B. ANGELL, LL.D.,  
PRESIDENT.

HARRY B. HUTCHINS, PH.B.,  
ACTING PRESIDENT.

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ALBERT B. PRESCOTT, M.D., LL.D., DEAN.  
ALVISO B. STEVENS, PH.C., SECRETARY.

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## **General Chemistry:**

PAUL C. FREER, PH.D., M.D.  
GEORGE O. HIGLEY, M.S.  
DAVID M. LICHTY, M.S.

## **Analytical Chemistry:**

OTIS C. JOHNSON, A.M., PH.C.  
EDWARD D. CAMPBELL, B.S.

## **Mineralogy:**

WILLIAM H. PETTEE, A.M.

## **Organic Chemistry:**

ALBERT B. PRESCOTT, M.D., LL.D.,  
MOSES GOMBERG, Sc.D.  
PERRY F. TROWBRIDGE, PH.B.

## **Botany, Pharmacognosy, Materia Medica:**

VOLNEY M. SPALDING, A.B., PH.D.  
JULIUS O. SCHLOTTERBECK, PH.C., PH.D.

## **Pharmacy and Prescriptions:**

ALVISO B. STEVENS, PH.C.

## **Pharmacology, Physiology, Bacteriology:**

THE FACULTY OF MEDICINE AND SURGERY.

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\*Absent on leave in 1897-8.

**Mathematics, Physics, Languages:**

THE FACULTY OF LITERATURE AND SCIENCE.

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**ASSISTANTS TO THE FACULTY.\***

**Pharmaceutical Preparations:** JAMES SEYMOUR, Ph.C.

**Qualitative Analysis:** HERMAN E. BROWN, B.S.

**Quantitative Analysis:** ARMAND R. MILLER.

**General Chemistry:** JESSE E. WHITSIT.

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\*In the year 1896-7.

# School of Pharmacy.

## ANNOUNCEMENT FOR 1897-98.

For the Conditions of Admission, see pages 9 to 13.  
For Laboratory Studies and Lectures, pages 14 to 21.  
The Order of Studies in the Two Years' Course, page 22.  
The Order of Studies in the Four Years' Course, page 23.  
Courses in Selected Studies, page 24.  
Studies in Research, page 21.  
Requirements for Graduation, page 25.  
Fees and Expenses, page 28.  
Register of Alumni, page 32.  
Index of Graduates with year of graduation, page 40.

## CALENDAR OF THE COLLEGE YEAR.

1897

September 23-28. *Examination for Admission* to the Four Years' Course.

September 29-30. *Examination for Admission* to the Two Years' Course, beginning with all applicants at 9 A. M. of the 29th.

October 1. FIRST SEMESTER BEGINS.

November — Thanksgiving recess of three days.

December 17. (Evening). Holiday Vacation begins.  
1898.

January 4. Exercises resumed.

February 18. (Evening). FIRST SEMESTER CLOSES.

February 21. SECOND SEMESTER BEGINS.

April 15. (Evening). Recess begins, ending April 25, (Evening).

June 30. COMMENCEMENT IN ALL THE DEPARTMENTS OF THE UNIVERSITY.



# Professional Purpose of the School.

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THE School of Pharmacy gives training for all branches of pharmacy and for various chemical pursuits. It provides a well-grounded preparation for service as a manufacturing chemist or as an analyst. The graduate is assured a thorough qualification for the prescription table, and for the most responsible positions in pharmacy. He is fitted to act as the chemist of the medical profession. In respect to the discipline of both the intellectual and the executive powers, the work of the School offers decided advantages, in the steady requirement of severe studies, and of exact operations, on the part of each student.

The school year extends from the first day of October to the Thursday following the last Wednesday in June. Students of the first year are released the second Friday before Commencement. For special purposes admission may be granted at the beginning of the second semester, February 21, 1898. For the full regular work admission cannot be granted at any other time than at the opening of the first or the second semester, as students are instructed in classes in progressive order. For investigations, students can be received at any time when there is room in the laboratories.

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## REQUIREMENTS FOR ADMISSION.

[For admission to advanced standing, see page 12.]

[For admission of students not candidates for a degree, see page 12.]

The requirements for admission vary in some particulars with the applicant's previous training in practical pharmacy,

and with the course of study he intends to pursue. Two courses are offered: a two-year course, leading to the degree of Pharmaceutical Chemist; and a four-year course, leading to the degree of Bachelor of Science in Pharmacy. The requirements are described below in two divisions, according to the degree which the student desires to take.

#### THE DEGREE OF PHARMACEUTICAL CHEMIST:

Applicants for admission to the two-year course, leading to the degree of Pharmaceutical Chemist, must be at least eighteen years of age.

It will be of advantage to the applicant to obtain at least a year of practical training in a drug store before entering the School. The required work leaves the student no time for an engagement in a drug store during the school year.

#### ADMISSION WITHOUT EXAMINATION.

**From High Schools.**—Applicants holding diplomas of graduation from any of the full courses of the schools approved by the Faculty of the Department of Literature, Science, and the Arts, and included in the list on pages 50 to 53, of the University Calendar for 1896-97, are admitted without examination, as are, also, graduates of four-year courses of other high schools of good standing.

**From Colleges.**—Students who have completed at least one year's work in an approved college of literature and science, and who bring explicit and official certificates describing their course of study and scholarship and testifying to their good character, are admitted without examination. Graduates of colleges of medicine or of pharmacy are also admitted without examination.

#### ADMISSION ON EXAMINATION.

Applicants who bring evidence of having been engaged in the practice of pharmacy for at least two years are admitted on examination in the following branches:

**English.**—Exercises in the writing of English with correctness. Especial regard is paid to orthography, punctuation, the use of capitals, grammatical construction, and rhetorical fitness.

**Mathematics.**—*Arithmetic.*—Fundamental Rules, Fractions (common and decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Measures. *Algebra.*—Fundamental Rules, Fractions, Equations of the First Degree containing two or more unknown quantities.

**Latin or German.**—In Latin, Jones's First Latin Book, or an equivalent amount in any other text-book. Instead of Latin, German to the

extent of a full year's study is accepted. Those who have a speaking and reading acquaintance with German are held to an examination in the grammar.

Other applicants are examined in the following branches:

**English.**—The same as given above.

**Mathematics.**—*Arithmetic and Algebra.*—The same as given above. *Geometry.*—The Elements of Plane Geometry as given in Olney's New Elementary Geometry, Beman and Smith's Plane and Solid Geometry, or an equivalent in other authors.

**Latin or German.**—The applicant may offer (1) three years of preparation in Latin; or (2) two years in Latin and one year in German; or (3) one year in Latin and two years in German. Those who offer three years in Latin are examined in the *grammar*—a thorough preparation in the elements; in *Prose Composition*—Jones's Exercises in Latin Prose Composition, or an equivalent in some other text-book; and in *Reading*—four books of Caesar's Commentaries and six select orations of Cicero, or an equivalent amount in some other text-book. Those who offer two years of Latin are examined as above, except in the orations of Cicero. Those who offer one year of Latin are examined in an amount equivalent to Jones's First Latin Book. Those who offer one year of German should have had daily recitations on the grammar during that time, accompanied by weekly exercises in writing, and the reading of seventy-five pages of some German reader. Those who offer two years of German should have devoted one year to the reading of some complete work of literary art.

**Physics.**—Carhart and Chute's Elements of Physics, or an equivalent.

**Botany.**—Practical exercises in the study of common plants, so conducted as to secure a familiar acquaintance with the essential facts of vegetable morphology, physiology, and relationship. The method pursued in Spalding's Introduction to Botany will indicate the kind of work desired. See page 41 of the University Calendar for 1896-97 for further information as to the extent of this requirement.

### THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY.

The requirements for admission to the four-year course, leading to the degree of Bachelor of Science in Pharmacy, are and will be in every respect, whether on diploma or by examination, the same as the requirements for admission to the Department of Literature, Science, and the Arts, in the groups which fit students for pursuing the University studies required of candidates for the degree of Bachelor of Science. Of the four groups of requirements described on pages 39 to 45 of the University Calendar for 1896-97, Group III or Group IV gives suitable preparation for work leading to the degree of Bachelor of Science in

Pharmacy; but persons who have completed the requirements of Group I or Group II will be admitted to the School on condition of making up the requirement in chemistry included in Group III. For the rules governing admission from diploma schools, and for a list of schools approved as qualified to prepare students for admission, see pages 48 to 53 of the Calendar. The rule relating to admission conditions, printed on page 110 of the Calendar, applies also to students admitted to the four-year course in the School of Pharmacy.

#### **ADMISSION TO ADVANCED STANDING.**

Students who have gained admission to the School may apply for credit in any of the college studies which they have pursued in another college, or in a high school whose graduates are admitted. Such application should be made to the Dean at the time of entering the School, and will be referred to the professor in charge of the studies in which credit is asked. In each case the professor will determine how much credit, if any, can be given. To this end he may appoint a time for examination of the applicant upon the study. Applicants are desired to bring explicit credentials as to the work done.

Students in the four-year course, applying for advanced credit, will govern their applications according to the rules in force in the Department of Literature, Science, and the Arts (page 45 of the University Calendar for 1896-97), though making their application to the Dean of the School of Pharmacy. Credits are received from the other departments, and from the Summer School, of this University. Not more than twelve hours of credit from the Summer School can be applied toward the degree of Bachelor of Science. Credits from other Schools of Pharmacy are adjusted separately for each study, as stated above. Owing to differences in the order and extent of the studies, credits cannot be counted in years of pharmaceutical college study.

#### **ADMISSION OF STUDENTS NOT CANDIDATES FOR A DEGREE.**

Persons over nineteen years of age who bring evidence of having been engaged in the practice of pharmacy for at least two years, may be admitted to pursue selected studies upon passing the admission requirement in English described on page 10 of this Announcement. The same privilege is accorded to persons over twenty-one years of age who have had professional experience approved by the Faculty, whether it has been in pharmacy or in some other pursuit, the same examination being required as to the correctness of English writing.

Students admitted under the above provisions are not regarded as candidates for any degree, and they do not become eligible for graduation until they have passed all the examination for admission to the course leading to the degree which they seek to obtain. To become

eligible for graduation with the degree of Pharmaceutical Chemist, the student must pass the examination for admission required of those who have been engaged in the practice of pharmacy. To become eligible for graduation with the degree of Bachelor of Science, the student must meet the full entrance requirements of the course leading to that degree.

Students not candidates for a degree may select such studies as they are found prepared to pursue, under the regulations of the Faculty. Courses of selected studies are arranged for students, to suit their purposes and qualifications. Selected studies may be continued so long as, in the judgment of the Faculty, they are carried with success and profit.

### **TIMES OF EXAMINATION.**

**For Admission to the Two-Year Course.**—An examination for admission will be held on Wednesday and Thursday, September 29 and 30, 1897. The examination will begin at 9 A. M. on the first of the two days mentioned.

**For Admission to the Four-Year Course.**—The examination for admission will be held in connection with that of applicants for admission to the Department of Literature, Science, and the Arts (see page 47 of the University Calendar).

### **ELECTION AND REGISTRATION OF STUDIES.**

At the beginning of each semester, it is necessary that each student should determine upon his studies for that period, and register them in due form, filling out the "election blank," of the School of Pharmacy, furnished at the office of the Secretary of the School. The studies are to be registered by the terms given under "Courses of Instruction" in the pages next following. As to the limits of the number of hours, see pages 22 and 23.

In the Course of two years the studies are mainly though not wholly the same for all students, and the order of succession of subjects in the first year is that given on page 22. When the college work is to extend beyond a period of two years, the student has opportunity of choice, and should at once consult the officers of the School upon his election of studies. The same is true of those who desire to study without respect to conditions of graduation. A succession of studies for four years is given on page 23.

In addition to the registration of all studies as above directed, every student taking work in mathematics, physics (other than Course C in general chemistry), English, German, or French, is required to register these studies by themselves, filling out the "election blank" of the Department of Literature and depositing the same as the blank directs. This blank can be obtained with the other, at the School of Pharmacy.

The student must first consult with the Dean of the School, and must obtain a note of permission for the studies elected, his elections being subject to action of the Faculty. This permission and formal registration are necessary in order to enter upon any of the studies of the Literary Department of the University.

After the second Monday in the semester, no further election and registration of studies can be made, without special action of the Faculty.

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## COURSES OF INSTRUCTION.

The courses of instruction comprise lectures, recitations, and laboratory work. The amount of work in each course is expressed in hours, an "*hour*" signifying one exercise a week during one semester. A lecture or recitation is usually one hour in length. A laboratory exercise employs three hours, more or less, being continued until the work assigned to one exercise, or a due proportion of the work assigned to the course, has been completed. The satisfactory completion of one exercise a week during one semester, including a sufficient standing in the examination held at the end of the semester, entitles the student to one *hour of credit* towards graduation. It is expected that a lecture or a recitation, with the personal study necessary to maintain the student's standing in the subject, will take in all as much time as a laboratory exercise. Therefore an *hour of credit* is regarded as having the same value whether obtained in a course of lectures or in a course of laboratory exercises.

In the descriptive schedule that follows, the several courses in any subject are lettered in the order in which they are to be taken by the student. The numbers in brackets are numbers of similar or corresponding courses given in the Department of Literature, Science, and the Arts. A further description of these may be found on pages 80 to 93 of the Calendar. The amount of credit towards graduation is indicated by the expressions *two*

three hours, etc. The numbers in brackets are numbers of courses given in the Department of Literature and

### PHARMACY.

A.—*Theory and Practice of Pharmacy.*—Three hours a week, First Semester. Lectures and Recitations. Professor STEVENS.

of pharmacopœias and recitations from the U. S. Pharmacopœia, specific gravity, weights, measures and their relations to each other, problems in parts by weight from chemical proportions, weights, and percentages of strength. Apparatus and manipulations for generating and regulating heat for pharmaceutical use. Solutions, decantation, clarification, pulverization, granulation, fusion, sublimation, percolation, distillation, dialysis, etc. Applications of specimens from the University museums, diagrams, etc., are illustrating the above subjects.

B.—*Operative Pharmacy and Pharmaceutical Preparations.*—Laboratory work and daily recitations, making ten hours of credit. First Semester. To be preceded by Course A in Analytical Chemistry, in order to clear of conditions. Professor STEVENS.

Preparation of official preparations; laboratory study of pharmaceutical standards; recitations upon manufacturing procedures. The satisfaction of about one hundred and fifty preparations required, from the classes of the U. S. Pharmacopœia and National Formulas, scales, and synthetic chemicals, from the simplest to the most difficult. Chemical proportions calculated into parts by weight and volume, with practical adjustment of conditions carried out in laboratory work of the student. Critical application of the pharmaceutical tests to commercial articles as well as to the preparations of the student.

The daily laboratory exercise takes about four hours.

C.—*Pharmaceutical Technology and Prescription Practice.*—Six hours of credit. Second Semester. Lectures, and Work at the Dispensing Stand, the time taken in the prescription exercises being determined upon the previous experience and the ability of the student. Professor STEVENS.

Technology of inorganic and organic articles used in pharmacy. Manufacture, commercial history, prevalent impurities, standard purity and strength, official tests, technical and public uses. Medicinal and poisonous. The Art of Dispensing. *Fac simile* of prescriptions will be thrown upon the screen by the aid of a stereopticon. Instruction as regards quantities, doses, errors, incompatibilities, and the art of compounding. Prescription writing, practice in the actual preparation of prescriptions and of prescription files.

**PHARMACOGNOSY.**

MICRO-BOTANY, PHARMACOGNOSY, PHARMACOLOGY, THERAPEUTICS.

COURSE A.—*Micro-botany*.—*Two hours* of credit. First Semester. Work in the botanical laboratory twice a week, two hours each time. Professor SCHLOTTERBECK.

Structural botany and the delineation of cell-structure, and cell-contents, tissues and tissue systems. Wherever possible material for demonstration is selected from plants or parts of plants which find medicinal application. Minute histological study of important crude drugs, their substitutes and adulterants. Practical work in the microscopical examination of powder-drugs, foods, and condiments, and the detection of adulterations. Reports upon commercial samples of same obtained in open market and upon specially prepared unknown mixtures.

COURSE B.—*Micro-botany*.—*Three hours* of credit. Second Semester. Work in the botanical laboratory twice a week, two hours each time, and a lecture once a week. Continuation of Course A. Prof. SCHLOTTERBECK.

The course is concluded by original investigation upon important crude drugs. A set of representative permanent mounts is prepared by each student.

COURSE C.—*Pharmacognosy*.—*Two hours* of credit. First Semester. Prof. SCHLOTTERBECK.

Lectures, demonstrations and recitations upon the botanical and geographical source, history, methods of cultivation, collection, and preparation, and the active constituents of all important medicinal plants. Practical exercises in the ready recognition of the various articles discussed in the lectures.

COURSE D.—*Materia Medica*.—*Two hours* a week. First Semester. May be taken in the same semester as Course C. Lectures and Recitations. Prof. SCHLOTTERBECK.

Pharmacology, Therapeutics, Posology, and Toxicology. The classification and history of medicines. Their physiological action, therapeutic applications, their preparations and doses. The symptoms of poisoning and the use of antidotes.

COURSE E.—*Pharmacognosy*.—*Two hours* a week. Second Semester. Continuation of Course C. Prof. SCHLOTTERBECK.

COURSE F.—*Materia Medica*.—*Two hours* a week. Second semester. May accompany Course E. Continuation of Course D. Prof. SCHLOTTERBECK.

**GENERAL CHEMISTRY.**

COURSE A. [Course 1.]—*Elementary Inorganic Chemistry*, Descriptive and Experimental. *Three hours* of credit. (Advanced credit from high schools upon examination.) First Semester. Mr. HIGLEY.



[Course 2.].—Laboratory work in General Inorganic Chemistry. *Credit arranged with instructor.* Mr. HIGLEY, Mr. LICHTY, and Dr. SHERMAN. This course must be preceded or accompanied by Course A or an equivalent.

COURSE B. [Course 5.].—*Inorganic Chemistry, Descriptive and Experimental.* Continuation of Course A. *Five hours* of credit. Second Semester. Lectures and recitations. Professor FREER.

COURSE AA.—*Inorganic Chemistry, Descriptive and Experimental.*—*Five hours* of credit, lectures and quizzes five times a week. First Semester. Professor FREER.

A beginning course extending further than Course A.

COURSE C.—*Physics.*—*Four hours* of credit, lectures and recitations four times a week. Advanced credit from high schools upon examination. Second Semester. Mr. LICHTY.

### ANALYTICAL CHEMISTRY.

#### QUALITATIVE ANALYSIS, QUANTITATIVE ANALYSIS, TECHNICAL ANALYSIS.

COURSE A. [Course 1.].—*Qualitative Analysis.*—Laboratory work and recitations, each five times a week, giving *ten hours* of credit. Either First or Second Semester. May be divided between the two semesters, as a five-hour course in each [Courses 3 and 3a]. Should be preceded or accompanied by a course in general chemistry. Professor JOHNSON.

The study of chemical change, in the reactions of metallic salts and other inorganic substances and as represented by equations. The comparison of solubilities, and the available means of separation. Methods of analysis and their relation to methods of synthesis. Reactions of oxidation and reduction. Analysis of mixtures.

COURSE B. [Course 4.].—*Quantitative Analysis.*—Laboratory work five times a week, and lecture-recitations twice a week, giving *seven hours* of credit. Either First or Second Semester. Must be preceded by Course A, completed clear of conditions. Professor CAMPBELL.

The determination of specific gravities; volumetric estimations; gravimetric determinations and separations. The results to come within specified limits of recovery. The laboratory exercises take from three to four hours each.

COURSE C. [Course 2.].—*Advanced Qualitative Analysis.*—Laboratory work three times a week, and recitations twice a week, giving *five hours* of credit. Second Semester. May follow Course A, of which it is a continuation. Professor JOHNSON.

COURSE D. [Course 5.].—*Advanced Quantitative Analysis.*—Laboratory

tory work five times a week, a *five-hour* course. Either First or Second Semester. Must be preceded by Course B. Professor CAMPBELL.

COURSE E. [Course 6.].—*Iron and Steel Analysis*.—Laboratory work, a *five-hour* course. Either First or Second Semester. Open to those who have completed Course B, and received special permission. Professor CAMPBELL.

COURSE F. [Course 8.].—*Analysis of Minerals*.—Qualitative and quantitative laboratory work for *five hours* of credit. Either First or Second Semester. Must be preceded by Courses A and B. Professor CAMPBELL.

COURSE G.—*Water Analysis*.—Laboratory work three times a week and reading, a course of *three hours* of credit. Either First or Second Semester. Must be preceded by Course B. Professor PRESCOTT and Dr. GOMBERG.

Mineral water analysis, and the chemical methods of sanitary water analysis.

#### SHORTER COURSES IN QUALITATIVE CHEMISTRY FOR STUDENTS NOT CANDIDATES FOR A DEGREE.

COURSE H.—*Three Months' Course*.—*Qualitative Chemistry*.—Laboratory work and recitations, each five times a week. Each laboratory exercise takes three or four hours, the recitation one hour, both in the time from one to six, P. M. *Begins October 1, January 4, March 28.*

The notation of salts; solubilities as concerned in the inorganic reactions studied group by group; chemical equations in precipitation, solution, and gas generation; studies of chemical change resulting in "*incompatibilities*." A limited number of "unknowns" in actual analysis, not earlier than the last month of the course. The purpose of the course is an acquaintance with chemical change, rather than qualification as an analyst, the course being too brief for the latter.

COURSE I.—[Course 3.].—*First Steps in Qualitative Analysis*.—Laboratory work three times a week, recitations twice a week. Second Semester. Professor JOHNSON. This course constitutes about one-half of Course A in Analytical Chemistry. It gives a little more analytical work than the three months' course.

#### ORGANIC CHEMISTRY.

##### INCLUDING ANALYTICAL AND APPLIED ORGANIC CHEMISTRY.

COURSE A, [Course 10.].—*Carbon Compounds*.—*Five hours* of credit. First Semester. To be preceded by a course in General Chemistry, and one in Analytical Chemistry. Lectures. Professor PRESCOTT.

A systematic study of organic compounds, their modes of synthetic production, the proofs of their structure, and their relationships. An

introduction to the reference literature of organic chemistry. With each lecture there is a short colloquium upon the text-book, and a brief essay drawn from reference literature written and read by a member of the class.

COURSE B. [Course 11.].—*Organic Preparations.*—Two hours of credit. Either First or Second Semester. May accompany or follow Course A. Laboratory work in organic synthesis, employing about six hours each week. Dr. GOMBERG and Mr. TROWBRIDGE.

Course B may be taken in part, or extended, to make *one hour or three hours* of credit.

COURSE C. [Course 12.].—*Organic Preparations and Ultimate Analysis.*—Five hours of credit. Either First or Second Semester. May accompany or follow Course A; either in addition to Course B or instead of the latter. Laboratory work five times a week. A good command of the work of organic combustions can be obtained in this course. Dr. GOMBERG and Mr. TROWBRIDGE.

Courses B and C may be continued, each for the same time and credit additional, in either semester, constituting respectively Course BB [11a] and Course CC [Course 13].

COURSE D. [Course 14.].—*Organic Analysis, and Drug Assaying.*—Five hours of credit. Second Semester. To be preceded by Course A and by a course in quantitative analysis (Course B of Analytical Chemistry). Laboratory work with Lectures. Dr. GOMBERG.

Qualitative and quantitative analysis for alkaloids, and certain other representative carbon compounds, drug assaying, the outlines of fat analysis. With sub-courses in technical organic analysis, adapted to the purposes of the student.

COURSE DD.—*Sanitary and Commercial Organic Analysis.*—Five hours of credit. First or Second Semester. Continuation or alternative of Course D. Laboratory work and reading. May be devoted to Food Analysis or to some branch of commercial analysis, such as that of Nostroms on the Market, or that of Paint Materials. Professor PRESCOTT and Dr. GOMBERG.

COURSE E.—*Toxicology.*—Inorganic and Organic. Chemical and microscopical. Three hours of credit. Either First or Second Semester. Must be preceded by Course D and the pre-requisites of that course. Laboratory work and reading. Professor PRESCOTT and Dr. GOMBERG.

#### BEGINNING COURSES IN ORGANIC CHEMISTRY IN SECOND SEMESTER.

Obtained only by permission. Given primarily for classes in other Departments of the University. Candidates for a degree begin the subject with Course A and do not require these courses.

COURSE F.—(1) *Lectures on Organic Chemistry* three times a week.—*Two hours* of credit. Mr. TROWBRIDGE.

(2) *Lectures on Organic Chemistry* five times a week. [Course 28.]—*Four hours* of credit. Professor PRESCOTT.

### PHYSIOLOGICAL CHEMISTRY.

COURSE A.—*Analysis of Urine*.—A course of *five hours* of credit, obtained in *three months*. Begins October 1, January 4, March 28. Must be preceded by a course in qualitative analysis, and one in organic chemistry. Laboratory work five times a week, and lectures three times a week,—all between 1 and 5 P. M. Professor NOVY.

The chemistry of normal and abnormal urine, including the synthetic preparation of urea and the most important members of the uric acid group, and methods for the quantitative determination of urea, uric acid, phosphates, chlorides, sulphates, sugar and albumin.

COURSE B. [Course 7.]—*Physiological Chemistry* including the Analysis of Urine.—*Seven hours* of credit. Laboratory work daily and lectures three times a week, the course extending through the semester. Either First or Second Semester. Must be preceded by a course of qualitative analysis and a course in organic chemistry. And it is advisable that quantitative analysis should precede this course. Professor NOVY.

Course C. [Course 3.]—*Bacteriology*.—*Five hours* of credit. Laboratory work daily for *three months*. Lectures are also given in First Semester [Course 2]. The course begins October 1, January 4, March 26. Professor NOVY.

### PHARMACOLOGY.

COURSE A.—*Pharmacological Laboratory*.—*Three hours* of credit. Obtained only by permission. Laboratory work and reading. To be preceded by Course A and Course D in organic chemistry. It is of advantage to have had previous work in physiology. Professor CUSHNY.

COURSE B.—*Physiology*.—*Five hours* of credit. First Semester. Obtained by permission. Lectures and recitations. Must be preceded by a course in organic chemistry. It is also desirable that the student have had studies in anatomy. Professor LOMBARD.

### MINERALOGY.

COURSE A.—*Crystallography*.—Twelve lectures supplemented by practical exercises. In Second Semester, beginning on a date to be announced. Professor PETTEE.

COURSE B. [Course 1.]—*Mineralogy*.—*Two hours* of credit. Includes Course A. Either First or Second Semester. To be preceded by a course in general chemistry. Lectures and practice.

COURSE C. [Course 2.]—*Mineralogy*.—*Five hours* of credit. Includes Course B as well as Course A. Second Semester. To be preceded by a course in general chemistry and a course in analytical chemistry. Lectures and practice. Professor PETTEE.

### PHYSICS.

*Physics* [Course 1.]—*Five hours*.—Second Semester. Open to those who have had the B. S. entrance examination in physics, and to all others who have had sufficient preparation. A knowledge of plane trigonometry is indispensable. Mechanics, Sound and Light. Lectures. Professor REED.

*Physics* [Course 2.]—*Four hours*.—First Semester. Must be preceded by [Course 1] in Physics and by a course in general or analytical chemistry. Electricity, Magnetism, and Heat. Lectures. Professor CARHART and Professor REED.

### RESEARCH.

The work of students is conducted in research in the several branches of science and technology, by the professors in charge, governed by the provisions of the Faculty. A student duly prepared by previous training, may be admitted to any work of investigation for which he is suited, by permission of the professor in charge of the work, subject to the regulation of the School. The period for research is limited, for undergraduates, to the final semester in the two years' course, and the senior year in the four years' course. Graduates of other colleges may enter at once upon research in this School. Holders of a Fellowship in this School must devote themselves wholly to research, and Graduate Students are constantly engaged in this manner. The research for a degree requires experimental work to obtain data not previously published. The indexing of chemical and pharmaceutical literature, in form for publication, is accepted as a necessary adjunct of research.

COURSES IN RESEARCH, in either First or Second Semester, and under the provision named above, are entitled to such *number of hours* of credit as shall be determined by the professor in charge of the work. In this determination the

quality of the work is to be taken as a joint factor with the time it has employed.

### FELLOWSHIPS.

**THE STEARNS' FELLOWSHIP.**—Established in 1895, and provided for two years, by means of a gift made for this purpose by Messrs. Federick Stearns & Company, of Detroit. Appointments to the Fellowship are made by the Faculty from graduates of the School who have the qualifications for the work, wholly in research.

The Committee of Revision of the United States Pharmacopœia receive special reports from the work of investigation in this School. A graduate is employed for his entire time upon a given research, and one or more advanced students selected for their accuracy and faithfulness, have the opportunity of assisting in the same work.

Other special and technical investigations are carried on, in a manner to give advanced students of ability and care very favorable opportunities for practical training as experts. Six separate laboratory apartments, carefully fitted with the latest appliances, are devoted to special researches of interest to ambitious students.

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## SUCCESSION OF STUDIES.

### I. IN THE COURSE OF TWO YEARS.

*First Year, First Semester.*—General Chemistry AA; Analytical Chemistry A (qualitative); Pharmacognosy A (micro botany).

*First Year, Second Semester.*—Analytical Chemistry B (quantitative); Pharmacognosy B (micro-botany); Pharmacy A; General Chemistry C (physics).

*Second Year, First Semester.*—Pharmacy B (laboratory and lectures); Organic Chemistry A; Pharmacognosy C, and D (materia medica).

*Second Year, Second Semester.*—Organic Chemistry D (drug assay-ing); Pharmacy C (technology and prescription practice); Pharmacognosy E, and F (materia medica); Mineralogy A (crystallography); Research work or an elective study of the credit of five hours.

The studies enumerated above are all required for the

degree of Pharmaceutical Chemist. They constitute an amount of work which taxes the full working power of a student of average quickness and strength of scholarship. Students who desire a longer time for the same work may apply for it on entering college, or during the first semester, and may obtain from the Faculty a distribution of all the work through *five semesters, or six semesters*, as found advisable in each case.

## II. IN THE COURSE OF FOUR YEARS.

The student is limited by rule to *sixteen hours* of credit (sixteen exercises per week) in each semester.

The student must present, at the beginning of each Semester, his election of studies for that semester, using a blank provided for that purpose, as directed on page 13. The elections of studies are subject to approval of the Faculty, who will take action upon them without delay, and all further adjustments of studies are to be completed as early as the second Monday of the semester. The studies prescribed for graduation are given on page 26. All the studies of the School are open to election.

### ADVISORY SEQUENCE OF STUDIES.

Students who enter the School prepared in Latin, in German, and chemistry, as high school studies, are advised to arrange their work in accordance with the scheme printed below. Students who enter with French instead of German, or without chemistry, are advised to follow the same scheme in general, with such modifications as may be necessary.

*First Year, First Semester*.—Mathematics [1 a], three hours; French four hours; German, two hours; Pharmacognosy A, two hours; General Chemistry [2], three hours; English [1 a], two hours.

*First Year, Second Semester*.—Mathematics [2 a], four hours; Physics [1], five hours; Pharmacognosy B, three hours; German two or four hours.

*Second Year, First Semester*.—Analytical Chemistry A, ten hours; Pharmacognosy C, two hours; French, two or four hours.

*Second Year, Second Semester*.—Analytical Chemistry B, seven hours;

Pharmacy A, three hours; Pharmacognosy E, two hours; General Chemistry, Course 5.

*Third Year, First Semester.*—Pharmacy B, ten hours; Organic Chemistry A, and a part of B, six hours.

*Third Year, Second Semester.*—Organic Chemistry D, five hours; Pharmacy C, four hours; Elective studies, not to exceed seven hours, taken from the following: Physiological Chemistry A, five hours, or C, five hours; Organic Chemistry BB, two hours, or C, five hours; French or German; Physics [2], five hours.

*Fourth Year, First Semester.*—Pharmacognosy D, three hours; Pharmacology A, three hours, and B, five hours. Elective studies, and studies in research.

*Fourth Year, Second Semester.*—Pharmacognosy E, three hours; Analytical Chemistry F, three hours; Organic Chemistry DD, five hours, or CC, five hours; Research.

### III. IN SELECTED STUDIES.

Students not expecting to graduate can enter for selected studies at the beginning of the First Semester, October 1, and at the beginning of the Second Semester, February 18. Also for certain studies, on January 4, and on March 28.

For pharmaceutical purposes, the student who is limited to one year's college work, can do well in taking the regular studies of the First Year in the Course of Two Years as stated on page 22.

Of the shorter courses usually most available for students having limited time in college, the following may be named:

Course A in Pharmacognosy. First Semester (page 15).

Course C in Pharmacognosy. First Semester (page 16).

Course A in General Chemistry. First Semester (page 16).

Course AA in General Chemistry. First Semester (page 17).

Course F in Organic Chemistry. Second Semester (20).

Course [28] in Organic Chemistry. Second Semester (page 20).

First Steps in Qualitative Analysis. Either Semester (page 18).

All the work of the School is open to students not candidates for a degree, so far as they are prepared to engage in it.



## EXAMINATION.

The examination upon each Course of instruction is held at the time the work of that Course is completed. The examinations, therefore, are held mostly at the end of the semesters, in February and in June.

The result of an examination is reported by the Professor in charge, for each student enrolled, to the Faculty, in terms as follows:

*Passed.*—Entitling the student to full credit for the course.

*Conditioned.*—Imposing some specified condition, usually to take another examination, the condition to be fulfilled before credit can be given.

*Provisionally Passed.*—Withholding the credit from the course until the student shall have done better work in other studies, in the judgment of the Faculty as a whole, who can change the record of Provisionally Passed to a record of Passed, or Conditioned, or Not Passed, whenever such change shall be justified by the scholarship of the student in his several studies.

*Not Passed.*—Requiring the student to go over the regular exercises of the study again before he receives another examination.

*Absent.*—With statement of the cause of absence; if the student have left the class, stating at what time; or stating if absent without excuse or explanation.

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 REQUIREMENTS FOR GRADUATION.

[Experience in the business of pharmacy in not made a requirement for a degree.]

I. *With the Degree of Pharmaceutical Chemist.*

[For requirements of college entrance, see page 10.]

## FIRST YEAR, FIRST SEMESTER.

	Hours of Credit.*	Hours in Lect. & Rec.	Hours in Laboratory.
General Chemistry, Course AA, . . . .	5	90	
Pharmacognosy, Course A, . . . .	2	36	
Analytical Chem., Course A, <i>Qual.</i> , . . .	10	90	360
	<hr/>	<hr/>	<hr/>
Total for First Semester, . . . .	17	216	360

\*“Hours of Credit” are the number of exercises *per week* for one semester. See page 14.

## ANNOUNCEMENT OF THE

## FIRST YEAR, SECOND SEMESTER.

General Chem., Course C, <i>Physics</i> , . . . .	4	72	
Pharmacy, Course A, . . . . .	3	54	
Pharmacog., Course B, <i>Micro-botany</i> , . . . .	3	18	72
Analytical Chem., Course B, <i>Quant.</i> , . . . .	7	36	360
	—	—	—
Total for Second Semester, . . . . .	17	180	432

## SECOND YEAR, FIRST SEMESTER.

Pharmacy, Course B, <i>Preparations</i> , . . . .	10	90	360
Organic Chemistry, Course A, . . . . .	5	90	
Pharmacognosy, Course C, . . . . .	2	36	
Pharmacog., Course D, <i>Materia Medica</i> , . . . .	2	36	
	—	—	—
Total for First Semester, . . . . .	19	252	360

## SECOND YEAR, SECOND SEMESTER.

Pharmacog., Course F, <i>Materia Medica</i> , . . . .	2	36	
Organic Chem., Course D, <i>Analysis</i> , . . . .	5	54	180
Pharmacognosy, Course E, . . . . .	2	36	
Mineralogy, Course A, <i>Crystallography</i> , . . . .		6	12
Pharmacy, Course C, <i>with Prescription Practice</i> , . . . .	4	72	
Investigations, or elective studies, . . . . .	5		180
	—	—	—
Total for Second Semester, . . . . .	18	204	372
Totals of required work, . . . . .	71	852	1524

Hours in laboratories and lectures, . . . . . 2,376

2. *With the Degree of Bachelor of Science in Pharmacy.*

[For requirements of college entrance, see page 11.]

[For the advisory sequence of studies, see page 23.]

In English: Courses [1], [1a].

In German: (a) for those who entered *without* German, Courses [1], [2]; or (b) for those who entered *with* German, Course [2].

In French: (a) for those who entered *without* French, Courses [1], [2], or an equivalent; or (b) for those who entered *with* French, four hours.

In Mathematics: Courses [1a], [2a].

In Physics: Course A [1].

In General Chemistry: (a) for those who entered *without* chemistry, Courses A, B, C; or (b) for those who entered *with* chemistry, Courses B, C.

In Analytical Chemistry: Courses A, B.

In Organic Chemistry: Courses A, C, D.

In Mineralogy: Course B.

In Pharmacognosy: Courses A, B, C, D, E, F.

In Pharmacy: Courses A, B, C.

From the other courses offered in the School, or in other departments of the University, the student must choose with the approval of the Faculty and complete enough including those above prescribed to make in all *one hundred and twenty* hours of credit.

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## LIBRARY, BOOKS OF REFERENCE, AND TEXT-BOOKS.

The School provides an extensive library, the main portion of which is shelved and indexed in the General Library Building of the University. The entrance to the Library is within one hundred feet of the entrance to the main building of the School of Pharmacy. The Library is open to readers twelve and one-half hours daily except Sundays and legal holidays during the collegiate year, and six hours daily during the three months of the summer vacation.

The Library provides the complete sets of the journals, the original repositories of the sciences related to pharmacy, as well as the current periodicals of the profession, encyclopædias and hand-books of chemistry and pharmacy, and the latest works of value in study. The works of reference in use in the School may be estimated at near four thousand volumes. The medical library in the same building, numbers 5,774 volumes, besides unbound pamphlets. In all the general library contains 84,698 volumes and 16,020 unbound pamphlets.

A working library is also provided, in a reading room of the Chemical Building, with several hundred works of immediate reference, duplicates of those in the General Library. These works are in constant use by students for reference reading upon their laboratory work and in preparing for their recitations. The files of current numbers of the journals of chemistry and pharmacy are also provided in the reading room.

The Class Text-books of the School, those which the student should obtain for himself, can be obtained in the book-stores in this University town at rates lower than those customary in the general trade of the large cities. These text-books include the following: In General Chemistry, Freer. In Qualitative Analysis, Prescott and Johnson. In Pharmacy, the U. S. Pharmacopœia, and Coblenz. In Botany, Bastin. In Pharmacognosy, Flückiger. In Materia Medica, Sayre and White and Wilcox. In Organic Chemistry, Bernthsen. In Organic Analysis, Prescott.

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### THE MUSEUM.

This comprises collections in educational chemistry, the chemical industries, pharmacy, and pharmacognosy. It occupies a floor space of 2,500 square feet in the chemical building, and is provided with permanent cases.

The principles of chemical science are illustrated by groups of synthetic products, as progressive formations, and by related compounds, both natural and artificial.

The chemical industries are represented by collections of the materials and the successive products of manufacture, and the resources and methods of industrial art. The outlines of chemical technology are presented with models and plans, giving object lessons in the modern production of alkalies and acids, dyes and pigment, soaps, sugars, starches, distillates, etc.

IN PHARMACOGNOSY, the collection of medicinal plants is extensive and well chosen for instruction both in botany and in commercial history. This collection is being rapidly enriched from all parts of the world. It is used in connection with the series of working samples in daily use in the classes. The crude drugs are displayed in comparison with their active constituents, each in its proportional quantity.

Pharmacy is exemplified in the preparations of the phar-

macopœia, the national formulary, and the appliances for skillful manipulation.

Of all these collections a good share originates in the work of students engaged in special lines of study and research.

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### FEEES AND EXPENSES.\*

THE MATRICULATION FEE is \$10 for residents of Michigan, and \$25 for others. It is paid but once and gives privileges of permanent membership in any Department of the University.

THE ANNUAL FEE is \$35 for residents of Michigan, and \$45 for others. It is paid the first year, and each year thereafter.

In the Chemical Laboratory the student pays by account for the chemicals and apparatus which he uses. The expense varies with prudence and economy, the average amount being about one dollar and twenty cents per week. Advance payment is required from time to time; the first deposit being twenty dollars.

At graduation there is a diploma fee of \$10.

Students obtain board and lodging in private families for from three to five dollars a week. Clubs are also formed, in which the cost of board is from one dollar and a half to two dollars and a half a week. Room rent varies from seventy-five cents to two dollars a week for each student. Students arriving in Ann Arbor can obtain information in regard to rooms and board by calling at the Steward's office.

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### CORRESPONDENCE.

Letters of inquiry may be addressed to Professor A. B. Stevens, Secretary, or to the Dean of the School of Pharmacy, Ann Arbor, Mich.

# ANNOUNCEMENT OF THE STUDENTS IN 1896-97.

## RESIDENT GRADUATES.

NAME.	RESIDENCE.
Clarence Henry Baum, Ph.C.,	<i>Danville, Ill.</i>
Oscar Conrad Diehl, Ph.G., <i>Buffalo College of Pharmacy, Ph.C.,</i>	<i>Buffalo, N. Y.</i>
James W. T. Knox, Ph.C., <i>Holder of the Stearns Fellowship.</i>	<i>Ann Arbor.</i>
James Seymour, Ph.C.,	<i>Ann Arbor.</i>
Miles Lucius Trowbridge, Ph.C.,	<i>Syracuse, N. Y.</i>
Milton Lyman Trowbridge, Ph.C.,	<i>Syracuse, N. Y.</i>
Ezra Jones Ware, Ph.C.,	<i>Grand Rapids.</i>

## UNDERGRADUATES.\*

NAME.	DEGREE.	CREDIT.	RESIDENCE.
Ursa S. Abbott,	Ph.C.	28	<i>Clearport, Ohio.</i>
John Newton Adams,	Ph.C.		<i>Sault Ste. Marie.</i>
Frederick James Austin,	Ph.C.	29	<i>Ann Arbor.</i>
Eva Albertie Taylor Bachel- der,	Ph.C.	34	<i>Saint Charles, Minn.</i>
John Sell Bachman,	Ph.C.	34	<i>Morrice.</i>
Frederick J. Baringer,	Ph.C.	25	<i>Gould, O.</i>
George Woodbury Beisel,	Ph.C.	16	<i>Monroe.</i>
Evi Dunn Benjamin,	Ph.C.	34	<i>Pontiac.</i>
Carl J. Biehl,	Ph.C.		<i>Sandusky, O.</i>
Walter Henry Blome,	Ph.C.		<i>Monroe.</i>
Norman Taylor Boggess,	Ph.C.	34	<i>Huntington, W. Va.</i>
Walter Stephen Brooks,	B.S.		<i>Caledonia.</i>
John Henry Brown,	Ph.C.	12	<i>Wilmington, O.</i>
Walter Briggs Cady, Ph.C.,	B.S.	106	<i>Ann Arbor.</i>
Arthur Whiteley Cannel,	Ph.C.		<i>Lansing.</i>
James William Cobb,	Ph.C.	27	<i>Birmingham.</i>
Carl Patterson Conn,	Ph.C.		<i>Van Wert, O.</i>
John Asa Coram,	Ph.C.		<i>Springfield, O.</i>
Aimée Coulter,	Ph.C.		<i>Chicago, Ill.</i>
Otis Adams Critchett,	Ph.C.	30	<i>Chicago, Ill.</i>
Harry Edwin Douglas,	Ph.C.		<i>Paw Paw.</i>
Edward Cumberland Frank,	Ph.C.		<i>Toledo, O.</i>

\*The abbreviations in the column headed DEGREE indicate the degree for which the student is studying. Where no abbreviation is given, the student is pursuing miscellaneous studies without being registered as a candidate for a degree. The figures in the column headed CREDIT indicate the number of hours of work taken by the student prior to the beginning of the current academic year, 1896-7, and completed without conditions, or credited to them on advanced standing. By an hour of work is meant the equivalent of one exercise a week for one semester.

Henry Hermann Gerkenmeyer,		23	<i>Toledo, O.</i>
Oscar William Gorenflo,	Ph.C.	14	<i>Detroit.</i>
Edward Sherman Gott,	Ph.C.	31	<i>Fort Madison, Ia.</i>
George Elliot Granger,			<i>Champaign, Ill.</i>
Nelson Alonzo Hall,	Ph.C.	20	<i>Sault Ste. Marie.</i>
Thomas Francis Halloran,	Ph.C.		<i>Chicago, Ill.</i>
Mark Butcher Hawes,	Ph.C.		<i>Parma.</i>
Bert Leroy Hayden,	Ph.C.		<i>Cassopolis.</i>
Perley Willis Hickman,	Ph.C.	24	<i>Nelsonville, O.</i>
Henry C. Hitchcock,	B.S.		<i>Ann Arbor.</i>
Louis Theodor Wilhelm			
Hogrefe,	Ph.C.	27	<i>Detroit.</i>
Raymond Edward Kanouse,	Ph.C.	9	<i>Manistee.</i>
William Kremers,	Ph.C.		<i>Holland.</i>
John William Lutes,	Ph.C.	46	<i>Richmond.</i>
Thomas Ambrose Major,	B.S.		<i>Manistee.</i>
Carl Metzger,	Ph.C.		<i>Winchester, Ill.</i>
Leroy Earl Minot,	Ph.C.		<i>Chicago, Ill.</i>
Clara Ella Nichols,	Ph.C.	34	<i>Beach City, O.</i>
Walter Adams Nivling,	Ph.C.	45	<i>Sioux City, Ia.</i>
William Henry Noll,	Ph.C.	34	<i>Fort Wayne, Ind.</i>
Floyd A. Northrop,	Ph.C.		<i>Northville.</i>
Elmer Albert Phillips,	Ph.C.		<i>Sinclairville, N. Y.</i>
Ernest Tracy Pettis,	Ph.C.		<i>Petoskey.</i>
S. Agnes Rich,	Ph.C.	31	<i>Traverse City.</i>
Sara Esther Richter,	Ph.C.	34	<i>Bethany, Mo.</i>
Edgar Schiller,	Ph.C.		<i>Ida Grove, Ia.</i>
Henry Philip Schmidt,	Ph.C.		<i>Anacortes, Wash.</i>
Caroline Barbara Service,	Ph.C.		<i>Ann Arbor.</i>
Leonard Short,	Ph.C.		<i>Manistee.</i>
LaVerne Ward Spring,	Ph.C.		<i>Coldwater.</i>
Alice M. Stevens,	Ph.C.	17	<i>Evansville, Wis.</i>
Harry Schellhous Stoddard,	Ph.C.	34	<i>Monroe.</i>
Amos Dorwin Sturgis,	Ph.C.	44	<i>Sturgis.</i>
Daniel George Sullivan,	Ph.C.		<i>Holyoke, Mass.</i>
Will Earl Sullivan,	Ph.C.		<i>Owosso.</i>
Burton Allen Sweet,	B.S.		<i>Carson City.</i>
Herbert Eugene Taber,	Ph.C.		<i>West Kingston, R. I.</i>
Roys J. Van Liew,	Ph.C.		<i>Port Huron.</i>
Arthur Fowler Vickery,	B.S.		<i>Charlotte.</i>
Charles Linden Wagner,	Ph.C.		<i>South Brooklyn, O.</i>
Charles Franklin Watkins,	Ph.C.	44	<i>Reed City.</i>
Oscar Charles Wheeler,	Ph.C.	25	<i>Ann Arbor.</i>
Sam Herman Zimmerman,	Ph.C.		<i>Helena, Mon.</i>

## Register of Alumni.

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The Chemical Laboratory of the University opened to students in 1856. A course in operative pharmacy was added to the laboratory curriculum in 1860, and was held open to those who had completed at least one of the chemical courses. From the first the laboratory was provided for the use of students of all Departments of the University, so far as chemical studies enter into the curriculum of each, and this provision in common for all the departments has continued to the present. From 1860 to 1868 Certificates of Proficiency were granted to students of any department who had completed with credit one or more of the laboratory courses of experimental study and had passed the chemical examinations. Of those who received the certificates some have followed chemistry as a profession, and their names so far as known are given with residence and occupation in the Alumni Register of Practicing Chemists of the University.

The laboratory course in operative pharmacy had been taken by students of the Department of Medicine, students of the Department of Literature and Science, and by special chemical students, for eight years, and to the number of one hundred and twenty-one persons, before the organization of a Department of Pharmacy. Of these early students of chemistry and pharmacy a directory of residence and occupation cannot now be given.

The School of Pharmacy was organized in 1868, at first as a polytechnic division of the Department of Literature, Science and the Arts. The charter of the School, and its power as a college of pharmacy to confer degrees, rest upon



(1) the acts of the Regents of the University in 1868 and 1876, sustained by (2) the laws of the State in 1851, and (3) the Constitution of Michigan, in accord with the act of Congress providing for the admission of the State. The degree of Pharmaceutical Chemist, with the diploma of graduation in pharmacy, was first conferred in 1869.

The Register of Alumni contains the names of all graduates in pharmacy at the University, 1869 to 1896, and does not include any others. The collegiate honors named in the Register are those held in addition to the degree of Pharmaceutical Chemist (Ph.C.).

In the Register a proprietor in pharmacy is designated as a "pharmacist" only; a joint-proprietor as a "pharmacist in the company of" the house designated; and one employed in pharmacy is recorded as "with" the proprietor named.

It is desired that errors or deficiencies in the Register, especially such as concern residence and occupation, shall be immediately reported with information to the Secretary of the Department. The kind services of Alumni are solicited in the endeavor to keep the registration as complete as possible. A mark of interrogation (?) following any name is given as a request for the postoffice address.

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### THE ALUMNI REGISTER FROM 1869 TO 1895.

This complete directory of the graduates, their present residences, occupations, positions, etc., revised in 1895, is issued separately. It will be furnished free of charge on application to the Secretary, Prof. A. B. Stevens, Ann Arbor, Mich.

The Register of the Graduates of 1895 and 1896, and a list of changes of address, etc., of all alumni during the past two years, is given in this Announcement.

The Alumni Register will continue to be kept in revision and publication as heretofore, but will be issued separately.

## OTHER CATALOGUES OF GRADUATES AND STUDENTS.

A Catalogue of Chemists, revised from time to time, is furnished to applicants. It is a professional catalogue of practicing chemists and teachers in chemistry who have been educated at this University. The "General Catalogue of Officers and Students of the University," 1837 to 1890, 472 pages, price \$1.75 in cloth, can be obtained by addressing the Steward of the University. Besides the names of the Graduates, it contains the names of Non-Graduate Students in the School of Pharmacy, to the number of 277, with the records of their residence and occupation so far as obtained.

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## GRADUATES WITH THE DEGREE OF PHARMACEUTICAL CHEMIST.

College degrees held in addition to that of Ph.C. are given with the year when they were conferred, after the names of graduates who have received them.

## 1895.

HENRY JOHN BOWERFIND.—Pharmacist with Meyer Bros., Fort Wayne, Ind.

CLAUDE MELNOTTE BUNN.—Sometime in the firm of Bunn & Poel Drug Co., 202 W. Main St., Kalamazoo, Mich. Pharmacist, Cocoa, Fla.

CORNELIUS DE JONGE.—Sometime with A. H. Lyman Co., Manistee, Mich. Assistant Chemist with Edward R. Squibb & Sons, 39 Doughty St, Brooklyn, N. Y.

GEORGE DOEHNE, Jr.—Sometime with A. T. Hall, 428 Wabash St., St. Paul. Pharmacist in St. Paul, Minn.

GILBERT ALLEN DOTY.—Pharmacist With Doty Bros., 284 Warren Ave. W., Detroit, Mich.

CHARLES FRANCIS DRAKE.—Graduate Student in studies for B.S. in Pharmacy in 1895-6. With Swift & Co., Union Stock Yards, Chicago, Ill.

HENRY ALBERT HERZER.—Manager of a pharmacy in Eaton Rapids, Mich.

- JOHN N. JUDY.—Pharmacist for Queen City Pharmacy, Cumberland, Md.
- EDGAR LIVINGSTONE KNAPP.—Pharmacist with Doak & Orrison, Springport, Mich.
- JAMES W. T. KNOX.—In research as Holder of the Stearns Fellowship, 1895-97, University of Michigan.
- ELGIN MALLETT.—Pharmacist with Nelson Mallett, Trenton, Mo.
- FAY MELVILLE MARSH.—Pharmacist with E. C. Haynes, Davison, Mich.
- GARRY WINDSOR MESSINGER.—Pharmacist for the Vailey City Drug Co., 196 E. Bridge St., Grand Rapids, Mich.
- ERNEST GRAY REESE.—Pharmacist for Lincon's Pharmacy, Bowling Green, Ohio.
- CHARLES HENRY STEINCAMP.—Pharmacist, 721 Utica St., Toledo, Ohio.
- WILBER JOHN TEETERS.—B.S., *Mount Union Coll.*, 1893. Demonstrator of Chemistry, Medical Department, State University of Iowa, Iowa City.
- EDWARD EUGENE WASHBURN.—With Washburn & Skinner, Pharmacists, New London, Ohio.
- JOHN LEWIS WASHBURN.—Sometime with E. E. Calkins, Ann Arbor, Mich. Pharmacist, Medina, N. V.
- HORACE HOUGHTON WATERS.—In the study of Medicine, University of Michigan.

## 1896.

- JAMES WILLARD AMES.—Pharmacist with S. E. Welch, Jr., Berea, Ky.
- CLARENCE HENRY BAUM.—In graduate studies, for B.S. (Phar.), University of Michigan.
- JOHN WESLEY DERRY.—Baltimore, Md.
- OSCAR CONRAD DIEHL.—Resident Graduate, employed in research by the Committee of Revision of the United States Pharmacopœia at University of Michigan.
- GEORGE MILLARD HEATH.—Pharmacist, manager and member of the firm of Heath Brothers, Druggists and Mfg. of Cigars, Milan, Mich.
- FRANK CARLETON HITCHCOCK.—Pharmacist with E. H. Haag, Ph.C. 1892, 601 Monroe St., Toledo, Ohio.
- CHARLES RALPH HORTON.—Pharmacist with A. L. Walker, Ph.C. 1879, 415 Woodward Ave., Detroit, Mich.
- CHARLES WILLIS JOHNSON.—Pharmacist with A. E. Mummery, Ph.C., 1885, Ann Arbor, Mich.

- ROBERT JAMES NISBET.—Pharmacist with E. B. Macy, 9901 Ewing Ave., Chicago, Ill. Address at 10406 Erving Ave.
- EDWIN JAMES FULLER OSTRANDER.—Pharmacist for Grace Hospital, Detroit, Mich.
- ISIDORE SANDERS.—Pharmacist with J. H. O'Reilly & Co., Albuquerque, New Mexico.
- EDWARD LOUIS SCHMITT.—Pharmacist with Joseph M. Schmitt, 312 North St., Rochester, N. Y.
- HARRY THEOPHILUS SMITH.—Chemist with the Lancaster Caramel Co., Lancaster, Pa.
- ROLAND BERT TABER.—Pharmacist with Harry L. Bird, Benton Harbor, Mich.
- HENRY WRIGHT TAYLOR.—With D. W. Curry, wholesale and retail drug business, Rome, Ga.
- MILES LUCIUS TROWBRIDGE.—Resident Graduate, in special studies, University of Michigan.
- MILTON LYMAN TROWBRIDGE.—Resident Graduate, in special studies, University of Michigan.
- CHARLES AUGUST FRED VON WALTHAUSEN.—Bay City, Mich.
- CLARENCE ALBERT WEAVER.—Pharmacist with F. W. R. Perry, Ph.C. 1880, (member and secretary Michigan State Board of Pharmacy), 709 Woodward Ave., Detroit, Mich.
- GEORGE PURDY WILDER.—Assistant in qualitative chemistry, 1895-6. Pharmacist with E. E. Calkins, Ph.C. 1884, Ann Arbor, Mich.
- ELISHA BIRD WILLIAMS.—Assistant in manufacturing pharmacy with Parke, Davis & Co., Detroit, Mich.
- FRANK HOWARD WILSON.—Pharmacist with C. B. Gatton, Virginia, Ill.
- EDWARD CHANCEY WORDEN.—Assistant chemist, for nitrogen determinations, New York State Agricultural Experiment Station, Geneva, N. Y.

#### CHANGES.

- ATWOOD, DANIEL W.—1892. Pharmacist with French St. Pharmacy, N. E. cor. 10th and French Sts., Wilmington, Del.
- BARNHART, CLARENCE E.—1894. Pharmacist with Woolf's Pharmacy, 801 Lincoln Ave., Peoria, Ill.
- BAUMHARDT, ADAM J.—1887. M. D. 1895. Physician, Lorain, Ohio.
- CADY, WALTER B.—1892. Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y., until 1885. Graduate student in studies for B.S., in Pharmacy.

- CLARK, EDWARD W.—1886. Ph.G. New York College of Phar., 1884. Pharmacist some time at 24 East Main st., Amsterdam, N. Y. Died at Ann Arbor, Mich., Jan. 4, 1896.
- CROMAN, JOSEPH M.—1887. M.D. Detroit College of Med. 1892. Physician, Mt. Clemens, Mich.
- DAVOLL, DAVID LAKE, Jr.—1893. Sometime a graduate student in chemistry. In 1895-96, assistant chemist in the research laboratory of Parke, Davis & Co., Detroit. In 1896-97, instructor in Organic Chemistry, University of Michigan, during absence of Dr. Goinberg. Engaged as assistant professor of pharmaceutical chemistry at Northwestern University School of Pharmacy.
- EWELL, ERWIN E.—1888. First Assistant Chemtst, U. S. Agricultural Department at Washington, D. C.
- FLINT, MERRILL S.—1889. Formerly Pharmacist in charge of the drug department of the Chateauquay Ore and Iron Co., Lyon Mountain, N. Y. Salesman with H. C. Hulbert & Co., Wholesale Paper and Paper Mill Supplies, 53 Beekman St., New York City.
- GEDDES, LILLIAN M.—1893. Pharmacist, Allston, Boston, Mass.
- GIBSON, WALTER McQ.—1883. Resident graduate of the University in 1884. Pharmacist, Portsmouth, Ohio. Address for 1896-97, Los Angeles, Cal.
- HAVENHILL, L. D.—1893. Phar. M., 1894. Assistant in Pharmacy and Pharmacognosy, University of Michigan, 1893-94. Analytical chemist with Dr. A. B. Lyons, Honolulu, H. I., 1895-96. Chemist for the Refining and Smelting Works, Aurora, Ill.
- HESSE, BERNHARD C.—1889. B.S. (Chem.), 1893, Ph.D., Chicago, 1896. Chemist for the New York House of Badische Anilin und Soda Fabrik. In 1896-7 with the works at Ludwigshafen, Germany.
- HILL, CHARLES OTIS.—1893. A.B., University of Tennessee. Assistant Chemist. U. S. Food investigation at University of Tennessee, Knoxville, Tenn. Address, 1008 Rose Ave.
- HIRTH, GEORGE J. Jr.—M.D., 1891. C.M., University of Berlin, '92. Physician, No. 66 Fargned Ave., Milwaukee, Wis. Professor of Histology and Lecturer on Principles of Surgery and Assistant to Chair of Surgery of the Milwaukee Medical College and School of Dentistry.
- HOUGHTON, E. M.—1893, M.D., 1894. Pharmacologist and Bacteriologist in the laboratory of Parke, Davis & Co., Detroit, Mich.
- HUBBARD, J. L.—1891. Manager of the Pharmacy of J. W. Fleming, 700 Genessee Ave., Saginaw, E., Mich.
- JACKMAN, W. F.—1887. B.S. (Chem.), 1886. In charge of the School of Pharmacy in Maine State College, Orono, Me.

- JACKSON, GEORGE R.—1892. A.B., Oberlin College. Pharmacist, 111½ Braler St., Memphis, Tenn. Professor of Chemistry in Collegiate Department of St. Augustine School, 1894-95.
- LITTLE, JOHN R.—1876. Manufacturer of pharmaceutical specialties, Bloomington, Ill.
- McGEE, THOMAS H.—1891. Pharmacist, Farmington, Mich.
- McNOAH, GRACE E.—1894. Graduate student, 1894-96. Died in Sierra Madra, Cal., December 14, 1896.
- MILLER, E. R.—1892. M.S., 1895. Adjunct Professor of Pharmacy, Alabama Polytechnic Institute. Auburn, Ala.
- MURDOCK, THOMAS E.—1894. Pharmacist in the firm of Murdock Bros., Northville, Mich.
- MURRAY, B. L.—1861. B.S. (Chem.), 1896. B.S. (Phar.), 1897. Chemist and Bacteriologist with W. C. Alpers at the MERCK PHARMACY, Merck Building, University Place, New York City.
- NICHOLS, MARION F.—1894. Pharmacist with Valley City Pharmacy, 75 Canal St. Chemist for the Wallin Leather Co. Residence, 228 E. Bridge St.—Grand Rapids, Mich.
- O'CONNOR, DELIA.—1894. Pharmacist with E. E. Calkins, Ph.C. 1884, Ann Arbor, Mich.
- PECK, FRANK J.—1891. Food Inspector and City Chemist, No. 318 City Hall, Cleveland, Ohio.
- SHERER, WILLIAM.—1893. Pharmacist with the Payne Drug Co., Wholesale and Retail, 24-26 East Main St., Rochester, N. Y.
- SHEPHERD, FRANK I.—1891. A.B. Sanford University, Cal., 1895. Some time Assistant Chemist with the William S. Merrill Chemical Co., manufacturers, Cincinnati, Ohio. Chemist, Glycerine Department, Globe Soap Works Co., Cincinnati, O. Fellow in Chemistry, University of Cincinnati.
- SMITH, MARIE R.—1888. M.D., Hahnemann Med. Coll., 1894. For some time in Hollands Pharmacy, Cor. 55th and Madison Ave., Chicago. Physician and Surgeon, N. E. Cor. Garfield Boulevard and Madison Ave., Hyde Park, Chicago, Ill. Professor of Anatomy and Histology, International Medical Mission College.
- SNOW, HERBERT W.—1884. Formerly analytical chemist for the manufacturing laboratory of Frederick Stearns & Co., Detroit, Mich. Member of the Convention of Revision of U. S. Pharmacopoeia, 1890. In the firm of Snow, Lund & Co., wholesale and retail druggists, Omaha, Neb., until 1896. Chemist and manager of the United States Pharmacal Company, 32 Market St., Chicago, Ill.
- SELTZER, LEONARD A.—1892. Pharmacist, with F. W. R. Perry, (Ph.C., 1880), 709 Woodward Ave., and Shurly Bl'd., Adams Ave. W., Detroit, Mich.

- VAN ZWALUWENBURG, A.—1887. Assistant in Pharmacognosy and Pharmacy in the University of Michigan in 1887–88. Sometime chemist for the St. Louis Ore and Steel Co., South St. Louis, Mo. Chemist and manager of metallurgical works, San Louis, Potosi, Mex., until May, 1897. In research studies, University of Michigan.
- WAIT, CORA L.—1890. Sometime dispensing pharmacist at Northern Michigan Insane Asylum.—Mrs. Fred W. Culver, 1896. Traverse City, Mich.

# Index to Name of Graduates.

WITH YEAR OF GRADUATION.

Abbey, C. C.	'89	Barry, B. T.	'89
Adams, Alfred W.	'71	Bassett, E. C.	'83
Adams, Arthur W.	'91	Baum, C. H.	'96
Alcorn, G. S.	'86	Baum, C. M.	'75
Adler, S. W.	'83	Baumhardt, A. J.	'87
Allen, C. P.	'88	Beach, L. F.	'76
Allen, Harris E.	'92	Beal, E. R.	'87
Allen, J. A.	'81	Becker, C. L.	'81
Allen, S. E.	'76	Benton, Lou N.	'93
Allison, C. W.	'88	Berry, Robert W.	'91
Allmand, C. W.	'84	Bird, Harry L.	'91
Allmendinger, C. G.	'82	Birkmier, Harry W.	'92
Allshouse, H. A.	'89	Bliss, H.	'69
Allworth, J. E.	'89	Block, L. H.	'89
Amerman, A. S.	'71	Bloomfield, E. M.	'69
Ames, J. H.	'76	Blum, E.	'84
Ames, W. A.	'96	Bodeman, F. E.	'73
Ando, Shinichi	'91	Boden, E. T.	'80
Armstrong, I. A.	'79	Boehme, C. A.	'78
Armstrong, R. B.	'90	Boetcher, C. V.	'89
Armstrong, R. S.	'94	Boise, E. P.	'62
Arnold, C. F.	'69	Boughton, E. G.	'76
Ashley, William F.	'91	Bowdish, G. A.	'89
Atwood, Daniel W.	'92	Bowen, R. F.	'79
Avery, J. H.	'77	Bowen, T. W.	'89
Ayers, J. N.	'79	Bower, F. T.	'76
Babbitt, E. T.	'83	Bowerfind, H. J.	'95
Baert, G. H.	'90	Boyce, S. R.	'90
Bailey, F. C.	'81	Boyd, J. P.	'73
Baird, J. W.	'83	Braddock, O. L.	'71
Baker, C.	'87	Briggs, Perry	'91
Baker, C. W.	'90	Brockmeier, J. H.	'82
Baker, F. W.	'90	Brooks, F. A.	'78
Banister, J. L.	'86	Brown, J. G.	'73
Bancroft, R. B.	'81	Buchanan, W. A.	'70
Barie, H. L.	'87	Buckham, A. J.	'86
Barnhart, C. E.	'94	Buckham, J. N.	'76
Barnabee, H. S.	'83	Bunn, Claude M.	'95



Burgess, Homer	'91	Crane, K. (Mrs. Johnson)	'74
Burke, W. H.	'84	Croman, J. M.	'87
Burnett, C. J.	'72	Crombie, S. M.	'82
Burroughs, C. S.	'76	Crowley, C. F.	'89
Burt, J. C.	'75	Cunningham, H.	'82
Cady, Walter B.	'92	Cunningham, T. N.	'85
Calkins, E. E.	'84	Curtis, A. C.	'70
Calkins, H. W.	'78	Cushing, G. M.	'84
Campbell, Arthur	'91	Cushman, H. DeP.	'69
Campbell, W. G.	'79	Damon, B. W.	'83
Carey, W. S.	'71	Damon, W. E.	'84
Carley, G. L.	'82	Daniels, G. B.	'86
Carr, L. B.	'87	Davis, Frank F.	'91
Carssow, Rudolph B.	'92	Davis, C. L.	'85
Cary, J. C. W.	'70	Davis, L. M.	'74
Case, E. T.	'84	Davoll, David Lake, Jr.	'93
Case, M. T.	'69	Dawson, B. F.	'79
Case, T. G.	'70	Dawson, G. V.	'84
Chamberlain, F. J.	'89	Dawson, J. H.	'83
Chapel, Fred N.	'93	Dean, G. E.	'82
Church, S. K.	'89	De Jonge, Cornelius	'95
Church, W. D.	'79	Denison, J. J.	'82
Churchill, Alfred P.	'91	Denny, J. D.	'83
Churchill, O. L.	'76	Derry, J. W.	'96
Cirkler, C. H.	'81	Deyo, L. H.	'82
Clark, E. W.	'86	Dickinson, O. B.	'75
Clark, F. M.	'85	Diehl, O. C.	'96
Clark, G.	'82	Dietrick, C. W.	'76
Clark, J. B.	'80	Dilworth, M. (Mrs. Comly)	'82
Clark, J. T.	'76	Dingley, C. A.	'76
Coad, N. G. O.	'75	Dixon, G. F.	'77
Cody, Bert E.	'92	Dodd, C. W.	'82
Coffin, C. L.	'84	Doehne, George, Jr.	'95
Cole, W. W.	'79	Doehne, W. H.	'87
Coleman, Sheldon	'93	Dothany, W. A.	'87
Collins, C. F.	'72	Doty, Gilbert Allen	'95
Collins, W. E.	'90	Dcty, J. W.	'86
Condon, W. D.	'86	Doty, W. P.	'86
Conrad, J. F.	'84	Douglas, S. T.	'74
Conrads, J. R.	'86	Drake, Charles F.	'95
Cook, Amosa D.	'92	Drake, Fred D.	'92
Cook, G. S.	'73	Dryfoos, L. A.	'87
Cooke, F. A.	'83	Duncan, C. G.	'74
Cooper, W. H.	'84	Dunn, J. S.	'85
Corbin, John W.	'91	Dunn, W. L.	'89
Cotton, R. M.	'74	Dupont, R. S.	'87
Coughlin, J.	'76	Eastwood, J. F.	'74
Covert, S.	'69	Eaton, H. K.	'86
Craig, J. T.	'84	Eaton, J. M.	'79
Crampton, C. A.	'82	Eaton, Mattie	'84
Crampton, C. B.	'71	Eberbach, W. F.	'88

Eddy, C. H. ....	'76	Graham, Abner B. ....	'93
Egeroff, A. (Mrs. Fuller) .....	'78	Graham, J. B. ....	'71
Ehrhardt, H. ....	'74	Greaves, Edith E. ....	'91
Ellis, L. A. ....	'87	Green, Frank A. ....	'91
Emanuel, Julia E. ....	'89	Green, M. U. ....	'76
Epley, A. W. ....	'94	Greene, A. L. ....	'82
Ewell, E. E. ....	'88	Gries, Joseph M. ....	'91
Ewell, H. P. ....	'85	Griffen, T. ....	'89
Ewing, F. ....	'70	Griffith, W. F. ....	'77
Faber, Fred. ....	'93	Griggs, O. ....	'75
Farnum, L. ....	'94	Grimwood, C. ....	'76
Fasquelle, L. J. ....	'82	Grochau, E. A. ....	'94
Fellows, C. A. ....	'80	Gunder, S. H. ....	'81
Felt, G. H. ....	'86	Gundrum, G. ....	'76
Field, E. C. ....	'83	Guy, O. G. ....	'70
Finley, W. E. ....	'79	Haag, Elliott H. ....	'92
Fischer, Richard. ....	'92	Hagle, P. N. ....	'70
Fitch, H. A. ....	'71	Haigh, C. T. ....	'86
Flanders, A. G. ....	'85	Haigh, D. L. ....	'85
Flick, O. C. ....	'71	Hale, A. K. ....	'73
Flint, M. S. ....	'89	Hall, G. C. ....	'83
Foote, C. E. ....	'80	Hallock, A. A. ....	'77
Ford, C. E. ....	'70	Hance, S. S. ....	'87
Ford, J. M. ....	'69	Harrington, Harriet L. ....	'81
Fox, A. L. ....	'69	Harris, B. A. ....	'77
Frank, H. O. ....	'83	Harvey C. B. ....	'84
Franz, H. S. ....	'89	Harvey, G. ....	'74
Frazee, F. H. ....	'84	Hasbrouch, W. A. ....	'78
Fritts, F. F. ....	'74	Hatch, H. F. ....	'70
Fromm, John D. ....	'93	Hauck, T. ....	'77
Frost, H. J. ....	'89	Hauenstein, W. ....	'83
Fuller, L. C. ....	'76	Havenhill, L. D. ....	'93
Gage, C. T. ....	'79	Hawes, G. S. ....	'90
Gardner, L. H. ....	'84	Hawley, E. P. ....	'79
Gatchell, E. E. ....	'81	Hawks, R. E. ....	'88
Gates, W. H. ....	'77	Heard, Mary K. ....	'92
Gebauer, C. J. ....	'80	Hearne, Joseph C. ....	'91
Geddes, A. B. ....	'85	Heath, G. M. ....	'96
Geddes, Lillian M. ....	'93	Heath, R. M. ....	'89
Gisler, J. F. ....	'80	Heim, H. ....	'78
Gentsch, G. T. ....	'71	Heim, W. ....	'82
George, E. L. ....	'69	Heimbach, S. J. ....	'79
Gessler, M. ....	'82	Heister, C. W. ....	'78
Gibson, E. D. ....	'78	Hendershott, F. P. (Mrs. Hen-	
Gibson, W. M. ....	'83	ning) ....	'87
Glazier, F. P. ....	'80	Henning, E. L. ....	'69
Godfrey, C. P. ....	'84	Henning, F. J. ....	'87
Goecker, L. ....	'82	Henry, G. C. ....	'74
Goetter, F. B. ....	'83	Herzer, H. A. ....	'95
Goodrich, L. A. ....	'82	Hesse, B. C. ....	'89
Gower, A. C. ....	'70	Higgins, G. E. ....	'70

Higley, W. K. ....	'83	Johnson, Marion E. ....	'77
Hill, Charles Otis ....	'93	Johnson, O. C. ....	'71
Hirth, G. J., Jr. ....	'89	Johnston, J. J. ....	'77
Hirth, P. H. ....	'86	Jones, A. A. ....	'82
Hitchcock, F. C. ....	'96	Jones, G. (Mrs. Cuscaden) ....	'74
Hitchcock, John E. ....	'91	Jones, J. H. ....	'94
Hoehn, J. ....	'82	Jones, J. R. ....	'90
Hoffman, A. G. ....	'84	Jones, M. A. ....	'87
Hoge, W. B. ....	'84	Josenhans, R. J. C. ....	'82
Hollan, L. H. ....	'69	Judson, F. E. ....	'80
Hollis, C. W. ....	'90	Judy, John N. ....	'95
Holloway, W. J. ....	'76	Kahn, Harry ....	'91
Holthoeffer, H. J. ....	'83	Kebler, L. F. ....	'90
Hood, C. H. ....	'69	Keith, F. R. ....	'89
Hopper, A. G. ....	'84	Kelly, J. P. ....	'79
Hopper, C. H. ....	'75	Kelly, M. C. ....	'71
Horine, D. P. ....	'88	Kelly, Wm. A. ....	'92
Horton, C. R. ....	'96	Kennedy, E. J. ....	'82
Hosack, H. E. ....	'83	Kennedy, Edward M. ....	'91
Houghton, P. S. ....	'79	Kerley, A. P. ....	'77
Houghton, E. M. ....	'93	Kidder, S., Jr. ....	'88
Howell, C. C. ....	'70	King, Joseph C. ....	'91
Hower, Phil. G. ....	'92	Kirby, M. S. ....	'90
Hubbard, F. J. ....	'77	Kirby, T. E. ....	'90
Hubbard, John L. ....	'91	Kirchgessner, W. C. ....	'89
Hubbard, T. H. ....	'82	Kirchmaier, G. A. ....	'83
Huber, L. H. ....	'90	Kirk, D. D. ....	'77
Hudson, C. H. ....	'84	Klein, Julius M. ....	'92
Hudson, H. H. ....	'94	Klingmann, T. ....	'90
Hueber, C. F. ....	'84	Knapp, E. L. ....	'95
Heusted, Frank P. ....	'91	Knapp, L. B. ....	'81
Huhn, C. H. ....	'81	Knapp, V. ....	'77
Humiston, K. P. ....	'77	Knox, S. R. ....	'94
Huntington, H. N. ....	'74	Knox, James W. T. ....	'95
Huntsman, A. ....	'74	Koehnle, O. H. ....	'78
Ilhardt, W. ....	'90	Koon, C. S. ....	'83
Irwin, J. L. ....	'80	Koons, C. W. ....	'79
Jackman, W. F. ....	'87	Kramer, L. G. ....	'89
Jackson, Charles E. ....	'93	Krause, B. S. ....	'87
Jackson, George R. ....	'92	Krug, W. H. ....	'89
James, H. F. ....	'76	Kuhlman, E. ....	'74
Janney, R. L. ....	'89	Lake, C. N. ....	'84
Jarman, E. M. ....	'90	Landers, Alfred E. ....	'92
Jarvis, J. W. ....	'69	Lauer, B. J. ....	'85
Jensen, P. C. ....	'79	Leamon, G. P. ....	'84
Jenter, C. G. ....	'89	Ledman, O. S. ....	'83
Jewett, H. S. ....	'70	LeFevre, E. L. ....	'83
Johnson, B. L. ....	'89	Leisenring, W. ....	'87
Johnson, C. S. ....	'75	Leist, J. L. ....	'75
Johnson, C. W. ....	'96	Levy, H. ....	'88
Johnson, J. S. ....	'77	Levy, M. M. ....	'90

Lewis, D. ....	'77	Miller, Emerson R. ....	'92
Lilly, E. A. ....	'80	Miller, T. W. ....	'86
Little, J. R. ....	'76	Miller, J. J. ....	'78
Lobb, A. S. ....	'77	Milner, T. J. ....	'90
Lockwood, W. S. ....	'89	Miner, M. A. ....	'71
Logan, R. ....	'77	Mills, C. W. ....	'70
Lohman, G. H. ....	'70	Mitchell, A. S. ....	'87
Lohrstorfer, Joseph ....	'92	Moody, L. W. ....	'78
Long, W. L. ....	'77	Moore, S. S. ....	'71
Longstaff, C. H. ....	'82	Moore, L. G. ....	'69
Longwell, E. B. ....	'82	Morgan, J. W. ....	'76
Lonstorf, G. J. ....	'80	Morris, George A. ....	'93
Loomis, J. H. ....	'81	Morris, J. E. ....	'82
Loudenbeck, Harry C. ....	'91	Morse, E. H. ....	'81
Lovin, C. C. ....	'81	Moss, J. C. ....	'75
Lupinski, H. ....	'78	Moss, J. R. ....	'70
Lynn, J. ....	'76	Muir, J. D. ....	'84
Maas, F. N. ....	'80	Mull, R. F. ....	'79
Mallett, Elgin ....	'95	Mummery, A. E. ....	'85
Maltbie, W. F. ....	'65	Murdock, T. E. ....	'94
Mann, A. ....	'80	Murray, Benjamin L. ....	'91
Marsh, Fay N. ....	'95	Neal, J. C. ....	'69
Marshall, E. H. ....	'87	Newman, I. N. ....	'70
Marshall, E. S. ....	'80	Newton, Welles B. ....	'93
Martzloff, C. E. ....	'90	Newton, W. F. ....	'70
Massey, F. W. H. ....	'76	Nichols, M. F. ....	'94
Massey, S. F. ....	'71	Nickerson, Frederick H. ....	'93
Maxwell, J. C. ....	'94	Niermann, H. G. ....	'90
McCarthy, R. H. ....	'73	Nisbet, R. J. ....	'96
McCrilles, J. E. ....	'85	Noll, M. ....	'81
McCrea, H. F. ....	'81	North, S. J. ....	'85
McCullough, R. S. ....	'80	Oaks, J. F. ....	'69
McGee, Thomas H. ....	'91	Obermann, R. F. ....	'83
McGregor, J. C. ....	'94	O'Connor, Delia ....	'94
McGuire, B. J. ....	'90	Oechsler, A. ....	'88
McKimmie, W. ....	'70	Oles, F. R. ....	'82
McNeil, M. (Mrs. J. O. Reed) ....	'82	Orth, L. P. ....	'79
McNoah, Grace E. ....	'94	Osborne, D. E. ....	'79
Mead, A. H. ....	'94	Ostrander, E. J. F. ....	'96
Mehlhop, F. W. ....	'89	Ostrander, R. H. ....	'83
Meinert, G. ....	'86	Palmer, G. H. M. ....	'82
Melcher, A. B. ....	'85	Palmer, W. ....	'90
Melville, J. E. ....	'85	Palmer, H. ....	'85
Meredith, E. E. ....	'82	Parker, A. S. ....	'79
Merkel, Charles W. ....	'93	Parker, C. E. ....	'85
Merell, A. F. ....	'71	Parker, F. C. ....	'81
Merell, O. A. ....	'70	Parker, R. J. ....	'85
Merrett, F. D. ....	'80	Parkill, S. E. ....	'77
Messenger, G. W. ....	'95	Parrott, B. E. ....	'81
Meyer, T. F. ....	'78	Parsons, C. W. ....	'81
Meyer, O. P. ....	'90	Parsons, H. B. ....	'76

Parsons, James H.	'92	Royer, T.	'82
Passolt, H. A.	'88	Roys, H. M.	'76
Parkinson, F. E.	'89	Ruddiman, E. A.	'86
Pattinson, George H.	'92	Rudolph, Karl E.	'93
Payne, C. E.	'80	Runyan, E. G.	'86
Pease, T. D.	'84	Ruse, A. E.	'88
Peck, F. J.	'91	Russell, Dorian M.	'91
Pengra, C. P.	'83	Rutan, J. A.	'69
Pennington, J. E.	'88	Sadler, A.	'69
Perry, F. W. R.	'80	Salls, J. H.	'75
Pett, W. F.	'85	Sanders, I.	'96
Peyton, C. S.	'84	Sandford, William E.	'92
Phillips, D. A.	'71	Scherer, O.	'86
Pierce, Bessie G.	'93	Scherer, William	'93
Pierron, J. J.	'76	Shettler, G. M.	'89
Post, M. E.	'77	Scheuerman, W. M.	'90
Powell, J. Z.	'71	Schlotterbeck, J. O.	'87
Prentice, F. F.	'72	Schmid, O. F.	'90
Pryer, C. E. (Mrs. Bartlett)	'82	Schmid, T.	'81
Pugh, F. B.	'74	Schmidt, L. W.	'83
Purtscher, C.	'90	Schmidt, S.	'81
Pusch, Oscar C.	'92	Schmidt, Walter K.	'91
Quayle, W. T.	'81	Schmitt, E. L.	'96
Ranke, W. F., Jr.	'85	Schott, A. A.	'84
Ransom, R. B.	'82	Schrage, W.	'74
Raynale, F. B.	'88	Schumacher, A. C.	'84
Reed, E. M.	'77	Seiffardt, L. E.	'78
Reese, E. G.	'95	Seltzer, Leonard A.	'92
Reeve, J. C.	'80	Senier, A.	'74
Reppert, F.	'72	Sexton, W. A.	'81
Reule, G. A.	'87	Seymour, James	'94
Rex, R. G.	'69	Shafer, C. M.	'83
Reyer, T.	'81	Shanafelt, F. P.	'83
Rice, E. F.	'85	Shaper, J. H.	'88
Rice, S.	'73	Sheedy, John T.	'92
Riebe, C.	'84	Sheffield, W. C.	'76
Rieger, C. F.	'83	Shepard, O. E.	'74
Risser, E. J.	'76	Shepherd, Frank I.	'91
Robertson, F. L.	'94	Sherrard, C. C.	'90
Robinson, Thomas E.	'92	Shubel, C. G.	'87
Rockwell, M.	'89	Shuler, D. P.	'87
Rockwell, O. M.	'82	Smith, A. W.	'85
Rodi, C. H.	'80	Smith, A. D.	'78
Roe, J. O.	'70	Smith, C.	'84
Rogers, A. S.	'85	Smith, Carl E.	'93
Romans, E. J.	'83	Smith, E. D.	'86
Romig, S. V.	'70	Smith, Henry F.	'91
Rood, G. W.	'81	Smith, H. T.	'96
Roos, C. L.	'83	Smith, J. H.	'77
Rouse, W. H.	'69	Smith, Marie R.	'88
Rowland, C. W.	'89	Smith, O. J.	'89

Smith, S. W.	'76	Townsend, P. L.	'78
Snow, Henry P.	'91	Travis, F. A.	'84
Snow, H. W.	'84	Tremain, H. A.	'75
Soetje, E.	'88	Trowbridge, Miles L.	'96
Soetje, Oscar H.	'92	Trowbridge, Milton L.	'96
Soyer, G. P.	'83	Tupper, E. A.	'85
Spencer, E.	'78	Turner, D. D.	'81
Spencer, H. H.	'85	Turner, G.	'83
Spencer, J. J.	'83	Upjohn, A. (Mrs. Campbell)	'71
Spenger, L. J.	'89	Upjohn, M. (Mrs. Sidman)	'71
Stabler, L. J.	'85	Van den Belt, N.	'82
Staehle, W. C.	'75	Vandivert, A. H.	'79
Standart, C. J.	'87	Van Etta, H. S.	'86
Stanton, E. M.	'69	Van Schoonhoven, Garrie G.	'91
Stecher, H. W.	'78	Van Walthausen, C. A. F.	'96
Stephenson, A. C.	'73	Van Zwaluwenburg, A.	'87
Steiner, S. G.	'85	Varnum, E. C.	'83
Steincamp, Charles H.	'95	Vedder, F. F.	'86
Stevens, A. B.	'75	Vogel, A. F.	'89
Stevens, J. C.	'83	Waggoner, A. T.	'84
Stevens, M. B.	'70	Wagner, George	'93
Stevens, R. H.	'77	Wait, Cora L. (Mrs. Culver)	'90
Stevenson, W. E.	'84	Walker, A. L.	'79
Stevenson, G. C.	'94	Wallace, R. H.	'78
Stewart, T. M.	'76	Ware, E. J.	'88
Stinson, E. L.	'82	Ward, R. M.	'81
Stivers, E. S.	'86	Warner, George J.	'92
St. John, W. I.	'84	Warren, W. McK.	'87
Stone, C. G.	'77	Washburn, Edward E.	'95
Styles, M. D.	'71	Washburn, John L.	'95
Sutton, John B.	'92	Waterman, C. N.	'88
Taber, R. B.	'96	Waters, H. H.	'95
Taylor, H. W.	'96	Watson, Catherine M.	'76
Taylor, W.	'70	Watson, J. B.	'80
Teeter, C. W.	'80	Weaver, C. A.	'96
Teeters, W. J.	'95	Weaver, J.	'74
Tegarden, J. L.	'94	Weeks, E. J.	'70
Textor, O.	'81	Wehrli, A. C.	'79
Thayer, H. A.	'90	Weightman, M.	'89
Thompson, C. W.	'81	Wells, Joseph J.	'92
Thompson, F. A.	'81	Wells, W. H.	'75
Thompson, J.	'89	Wertz, S. G.	'93
Thompson, M. S.	'86	Wesener, J. A.	'88
Thornburgh, T. R.	'82	Westfall, D. M.	'90
Thum, F.	'80	Wetzel, R. M.	'84
Thum, H.	'78	Wheeler, A. M.	'81
Tibbals, W. J.	'90	Wheelock, W. C.	'89
Todd, A. H.	'80	Whinery, J. B.	'88
Thompkins, J. W.	'77	White, B. W. (Mrs. W. Hager)	'83
Topping, C. O.	'94	White, W. H.	'82
Topping, G. B.	'87	Whitman, A. C.	'75

Whitney, James W. ....	'91	Wolcott, W. A. ....	'70
Whitlark, W. J. ....	'76	Wolf, F. C. ....	'80
Wickwire, F. ....	'82	Wood, C. ....	'75
Wilbur, T. S. ....	'73	Wood, H. R. ....	'90
Wilder, G. P. ....	'96	Wood, J. B. ....	'89
Wiley, C. D. ....	'87	Wood, L. N. ....	'79
Wilhite, E. L. ....	'84	Worden, C. E. ....	'78
Williams, C. H. ....	'94	Worden, E. C. ....	'96
Williams, E. B. ....	'96	Wrampelmeier, T. J. ....	'78
Williams, S. W. ....	'81	Wurmb, T. H. ....	'81
Wilmarth, G. E. ....	'75	Wykoff, W. C. ....	'84
Wilson, F. H. ....	'96	Wyman, H. S. ....	'77
Wilson, F. L. ....	'79	Young, A. V. E. ....	'75
Wilson, G. E. ....	'78	Young, A. L. ....	'77
Wilson, O. L. ....	'81	Young, R. D. ....	'90
Wilson, W. M. ....	'71	Zeig, A. C. ....	'89
Wise, C. H. ....	'90	Zerse, O. G. ....	'82
Wise, P. E. ....	'94	Zwick, K. G. ....	'88
Wiseman, F. D. ....	'88		

# CONTENTS.

	PAGE.
The Faculty .....	6
ANNOUNCEMENT FOR 1897-98 .....	8
Calendar .....	8
<i>Requirements for Admission:</i>	
To the College Course of Two Years .....	10
To the College Course of Four Years .....	11
Of Students not Candidates for a Degree .....	12
To Advanced Standing .....	12
Election and Registration of Studies .....	13
<i>Courses of Instruction:</i>	
In Pharmacy .....	15
In Pharmacognosy and Materia Medica .....	16
In General Chemistry .....	16
In Analytical Chemistry .....	17
In Organic Chemistry .....	18
In Physiological Chemistry .....	20
In Pharmacology .....	20
In Mineralogy .....	20
In Physics .....	21
In Research .....	21
Fellowships .....	22
Succession of Studies .....	22
In the Course of Two Years .....	22
In the Course of Four Years .....	23
In Selected Studies .....	24
EXAMINATIONS .....	25
REQUIREMENTS FOR GRADUATION:	
<i>With the Degree of Pharmaceutical Chemist</i> .....	25
<i>With the Degree of Bachelor of Science in Pharmacy</i> .....	26
THE LIBRARY, BOOKS OF REFERENCE AND TEXT-BOOKS .....	27
THE MUSEUM .....	28
FEES AND EXPENSES .....	29
STUDENTS IN 1896-97 .....	30
REGISTRAR OF THE ALUMNI OF THE SCHOOL OF PHARMACY, with present residence and occupation .....	32
INDEX TO NAMES OF GRADUATES, with year of graduation .....	40



UNIVERSITY OF MICHIGAN

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SCHOOL OF PHARMACY.

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ANNUAL ANNOUNCEMENT

AND

REGISTER OF ALUMNI.

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THIRTY-FIRST YEAR, 1898-99.

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ANN ARBOR, MICH.:  
PUBLISHED BY THE UNIVERSITY  
1898

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**THE COURIER OFFICE, PRINTERS AND BINDERS,**  
**ANN ARBOR MICHIGAN.**

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# UNIVERSITY OF MICHIGAN.

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## THE UNIVERSITY AND THE STATE.

THE University of Michigan is a part of the public educational system of the State. The governing body of the institution is a Board of Regents, elected by popular vote for terms of eight years, as provided in the Constitution of the State. In accordance with the law of the State, the University aims to complete and crown the work that is begun in the public schools, by furnishing ample facilities for liberal education in literature, science, and the arts, and for thorough professional study of engineering, medicine, pharmacy, law, and dentistry. Through the aid that has been received from the United States and from the State, it is enabled to offer its privileges, with only moderate charges, to all persons of either sex, who are qualified for admission. While Michigan has endowed her University primarily for the higher education of her own sons and daughters, it must be understood that she also opens the doors of the institution to all students, wherever their homes. It is in this broad, generous, and hospitable spirit, that the University has been founded, and that it endeavors to do its work.

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## ORGANIZATION OF THE UNIVERSITY.

The University comprises the Department of Literature, Science, and the Arts (including the Graduate School and the Summer School), the Department of Engineering, the Department of Medicine and Surgery, the Department of Law, the School of Pharmacy, the Homœopathic

Medical College and the College of Dental Surgery. Each department, school, and college, has its special Faculty. The University Senate is a body representing all the faculties, and considers questions of common interest and importance.

In the Department of Literature, Science, and the Arts, different lines of study lead to the degrees of Bachelor of Arts, Bachelor of Philosophy, Bachelor of Science, Bachelor of Letters, the corresponding Masters' degrees, and the degrees of Doctor of Philosophy and Doctor of Science.

In the professional schools degrees are given as follows: In the Department of Engineering, the degrees of Bachelor of Science, Master of Science, Civil Engineer, Mechanical Engineer, and Electrical Engineer; in the Department of Medicine and Surgery, the degree of Doctor of Medicine; in the Department of Law, the degrees of Bachelor of Laws and Master of Laws; in the School of Pharmacy, the degrees of Pharmaceutical Chemist, Bachelor of Science, and Master of Science; in the Homœopathic Medical College, the degree of Doctor of Medicine; in the College of Dental Surgery, the degrees of Doctor of Dental Surgery and Doctor of Dental Science.

Students in any department of the University may enter the classes in any other department, upon obtaining permission from the faculties of the respective departments.

# Faculty of the School of Pharmacy.

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JAMES B. ANGELL, LL.D.  
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THE FACULTY OF MEDICINE AND SURGERY.

## **Mathematics, Physics, Languages:**

THE FACULTY OF LITERATURE AND SCIENCE.

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**ASSISTANTS TO THE FACULTY.**

**Pharmaceutical Preparations:** EVI D. BENJAMIN, PH.C.

**Qualitative Analysis:** HERMAN E. BROWN, B.S.

**Quantitative Analysis:** CARL SUNDSTROM.

**General Chemistry:** CLIFTON H. BRIGGS, M.S.

# School of Pharmacy.

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## ANNOUNCEMENT FOR 1898-99.

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For the Conditions of Admission, see pages 9 to 13.  
For Laboratory Studies and Lectures, pages 14 to 21.  
The Order of Studies in the Two Years' Course, page 22.  
The Order of Studies in the Four Years' Course, page 23.  
Courses in Selected Studies, page 24.  
Studies in Research, page 21.  
Requirements for Graduation, page 25.  
Fees and Expenses, page 28.  
Register of Alumni, page 32.  
Index of Graduates with year of graduation, page 41.

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## CALENDAR OF THE COLLEGE YEAR.

### 1898.

September 22-24. *Examination for Admission.*  
September 24-26. *Registration of Students* having Admission upon  
Diploma.  
September 27. FIRST SEMESTER BEGINS.  
November —. Thanksgiving recess of three days.  
December 22. (Evening). Holiday Vacation begins.

### 1899.

January 10. Exercises resumed.  
February 10. (Evening). FIRST SEMESTER CLOSES.  
February 13. SECOND SEMESTER BEGINS.  
April 14. (Evening). Recess begins, ending April 24. (Evening).  
June 22. COMMENCEMENT IN ALL THE DEPARTMENTS OF THE UNIVERSITY.



# Professional Purpose of the School.

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THE School of Pharmacy gives training for all branches of pharmacy and for various chemical pursuits. It provides a well-grounded preparation for service as a manufacturing chemist or as an analyst. The graduate is assured a thorough qualification for the prescription table, and for the most responsible positions in pharmacy. He is fitted to act as the chemist of the medical profession. In respect to the discipline of both the intellectual and the executive powers, the work of the School offers decided advantages, in the steady requirement of severe studies, and of exact operations, on the part of each student.

The school year extends from the Tuesday preceding the last Wednesday in September to the Thursday preceding the last Wednesday in June. Students of the first year are released the second Friday before Commencement. Admission may be obtained at the beginning of the second semester, February 13, 1899. For the full regular work admission cannot be granted at any other time than at the opening of the first or second semester, as students are instructed in classes in progressive order. For investigations, students can be received at any time when there is room in the laboratories.

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## REQUIREMENTS FOR ADMISSION.

[For admission to advanced standing, see page 12.]

[For admission of students not candidates for a degree, see page 12.]

The requirements for admission vary in some particulars with the applicant's previous training in practical pharmacy,

and with the course of study he intends to pursue. Two courses are offered: a two-year course, leading to the degree of Pharmaceutical Chemist; and a four-year course, leading to the degree of Bachelor of Science in Pharmacy. The requirements are described below in two divisions, according to the degree which the student desires to take.

### THE DEGREE OF PHARMACEUTICAL CHEMIST.

Applicants for admission to the two-year course, leading to the degree of Pharmaceutical Chemist, must be at least eighteen years of age.

It will be of advantage to the applicant to obtain at least a year of practical training in a drug store before entering the School. The required work leaves the student no time for an engagement in a drug store during the school year.

### ADMISSION WITHOUT EXAMINATION.

**From High Schools.**—Applicants holding diplomas of graduation from any of the full courses of the schools approved by the Faculty of the Department of Literature, Science, and the Arts, and included in the list on pages 52 to 56, of the University Calendar for 1897-98, are admitted without examination, as are, also, graduates of four-year courses of other high schools of good standing.

**From Colleges.**—Students who have completed at least one year's work in an approved college of literature and science, and who bring explicit and official certificates describing their course of study and scholarship and testifying to their good character, are admitted without examination. Graduates of colleges of medicine or of pharmacy are also admitted without examination.

### ADMISSION ON EXAMINATION.

Applicants who bring evidence of having been engaged in the practice of pharmacy for at least two years are admitted on examination in the following branches:

**English.**—Exercises in the writing of English with correctness. Especial regard is paid to orthography, punctuation, the use of capitals, grammatical construction, and rhetorical fitness.

**Mathematics.**—*Arithmetic.*—Fundamental Rules, Fractions (common and decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Measures. *Algebra.*—Fundamental Rules, Fractions, Equations of the First Degree containing two or more unknown quantities.

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## EXPLANATION.

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*A student applying for admission to the School of Pharmacy of the University of Michigan should have this form filled out and signed by the principal or superintendent of the school which he has attended. This form should be sent to Prof. A. B. Prescott, or Prof. A. B. Stevens, Ann Arbor, Mich. It will be subjected to examination and the result will be endorsed on the form and the applicant will be informed of the conditions under which he will be admitted.*

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**Physics.**—Carhart and Chute's Physics or an equivalent.

**Chemistry.**—The high school preparation should include a year in chemistry, in which laboratory work is advised.

**Latin or German.**—In Latin, Jones's First Latin Book, or an equivalent amount in any other text-book. Instead of Latin, German to the extent of a full year's study is accepted. Those who have a speaking and reading acquaintance with German are held to an examination in the grammar.

Other applicants are examined in the following branches:

**English.**—The same as given above.

**Mathematics.**—*Arithmetic and Algebra.*—The same as given above.  
*Geometry.*—The Elements of Plane Geometry.

**Latin or German.**—The applicant may offer (1) three years of preparation in Latin; or (2) two years in Latin and one year in German; or (3) one year in Latin and two years in German. Those who offer three years in Latin are examined in the *grammar*—a thorough preparation in the elements; in *Prose Composition*—Jones's Exercises in Latin Prose Composition, or an equivalent in some other text-book; and in *Reading*—four books of Caesar's Commentaries and six select orations of Cicero, or an equivalent amount in some other text-book. Those who offer two years of Latin are examined as above, except in the orations of Cicero. Those who offer one year of Latin are examined in an amount equivalent to Jones's First Latin Book. Those who offer one year of German should have had daily recitations on the grammar during that time, accompanied by weekly exercises in writing, and the reading of seventy-five pages of some German reader. Those who offer two years of German should be able to translate at sight a passage of moderately difficult prose.

**Physics.**—Carhart and Chute's Elements of Physics, or an equivalent.

**Botany.**—Practical exercises in the study of common plants, so conducted as to secure a familiar acquaintance with the essential facts of vegetable morphology, physiology, and relationship. The methods pursued in Spalding's Introduction to Botany will indicate the kind of work desired.

## THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY.

The requirements for admission to the four-year course, leading to the degree of Bachelor of Science in Pharmacy, are and will be in every respect, whether on diploma or by examination, the same as the requirements for admission to the Department of Literature, Science, and the Arts, in the groups which fit students for pursuing the University studies required of candidates for the degree of Bachelor of Science. Of the four groups of requirements described on pages 42 to 47 of the Univer-

sity Calendar for 1897-98, Group III or Group IV gives suitable preparation for work leading to the degree of Bachelor of Science in Pharmacy; but persons who have completed the requirements of Group I or Group II will be admitted to the School on condition of making up the requirement in chemistry included in Group III. For the rules governing admission from diploma schools, and for a list of schools approved as qualified to prepare students for admission, see pages 50 to 56 of the Calendar. The rule relating to admission conditions, printed on page 115 of the Calendar, applies also to students admitted to the four-year course in the School of Pharmacy.

### **ADMISSION TO ADVANCED STANDING.**

Students who have gained admission to the School may apply for credit in any of the college studies which they have pursued in another college, or in a high school whose graduates are admitted. Such application should be made to the Dean at the time of entering the School, and may be referred to the professor in charge of the studies in which credit is asked. In each case the professor will determine how much credit, if any, can be given. To this end he may appoint a time for examination of the applicant upon the study. Applicants are desired to bring explicit credentials as to the work done. Applicants by correspondence, before the opening of college, may have their credentials acted upon for advanced standing.

Students in the four-year course, applying for advanced credit, will govern their applications according to the rules in force in the Department of Literature, Science, and the Arts (page 47 of the University Calendar for 1897-98), though making their application to the Dean of the School of Pharmacy.

Credits are received from the other departments, and from the Summer School, of this University. Credits from other Schools of Pharmacy are adjusted separately for each study, as stated above. Owing to differences in the order and extent of the studies, credits cannot be counted in years of pharmaceutical college study.

### **ADMISSION OF STUDENTS NOT CANDIDATES FOR A DEGREE.**

Persons over nineteen years of age who bring evidence of having been engaged in the practice of pharmacy for at least two years, may be admitted to pursue selected studies upon passing the admission requirement in English described on page 10 of this Announcement. The same privilege is accorded to persons over twenty-one years of age who are able to study with advantage in the School, the same examination being required as to the correctness of English writing.

Students admitted under the above provisions are not regarded as candidates for any degree, and they do not become eligible for graduation until they have passed all the examination for admission to the course leading to the degree which they seek to obtain. To become eligible for graduation with the degree of Pharmaceutical Chemist, the student must at least pass the examination for admission required of those who have been engaged in the practice of pharmacy. To become eligible for graduation with the degree of Bachelor of Science, the student must meet the full entrance requirements of the course leading to that degree.

Students not candidates for a degree may select such studies as they are found prepared to pursue, under the regulations of the Faculty. Courses of selected studies are arranged for students, to suit their purposes and qualifications (see page 24). Selected studies may be continued so long as, in the judgment of the Faculty, they are carried with success and profit.

### **TIME OF EXAMINATION.**

**For Admittance to the Two-Year Course.**—An examination for admission will be held on Thursday and Friday, September 22 and 23, 1898, beginning at 9 A. M. on Thursday.

**For Admission to the Four-Year Course.**—The examination for admission will be held in connection with that of applicants for admission to the Department of Literature, Science, and the Arts (see the schedule of the hours of these examinations in the University Calendar for 1897-98.)

### **ELECTION AND REGISTRATION OF STUDIES.**

At the beginning of each semester, it is necessary that each student should determine upon his studies for that period, and register them in due form, filling out the "election blank," of the School of Pharmacy, furnished at the office of the Secretary of the School. The studies are to be registered by the terms given under "Courses of Instruction" in the pages next following. As to the limits of the number of hours, see pages 22 and 23.

In the course of two years the studies are mainly though not wholly the same for all students, and the order of succession of subjects in the first year is that given on page 22. When the college work is to extend beyond a period of two years, the student has opportunity of choice, and should at once consult the officers of the School upon his election of studies. The same is true of those who desire to study without respect to conditions of graduation. A succession of studies for four years is given on page 23.

In addition to the registration of all studies as above directed, every student taking work in mathematics, physics, or languages, after consultation with the Dean must fill out the "election blank" of the Department of Literature. This requires the signature of the Dean of the School of Pharmacy, and must be deposited as the blank directs. Elections must be made not later than the first Saturday of the semester.

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## COURSES OF INSTRUCTION.

The courses of instruction comprise lectures, recitations, and laboratory work. The amount of work in each course is expressed in hours, an "*hour*" signifying one exercise a week during one semester. A lecture or recitation is usually one hour in length. A laboratory exercise employs three hours, more or less, being continued until the work assigned to one exercise, or a due proportion of the work assigned to the course, has been completed. The satisfactory completion of one exercise a week during one semester, including a sufficient standing in the examination held at the end of the semester, entitles the student to one *hour of credit* towards graduation. It is expected that a lecture or a recitation, with the personal study necessary to maintain the student's standing in the subject, will take in all as much time as a laboratory exercise. Therefore an *hour of credit* is regarded as having the same value whether obtained in a course of lectures or in a course of laboratory exercises.

In the descriptive schedule that follows, the several courses in any subject are lettered in the order in which they are usually taken by the student. The numbers in brackets are numbers of similar or corresponding courses given in the Department of Literature, Science, and the Arts. A further description of these may be found on pages 80 to 93 of the Calendar. The amount of credit towards graduation is indicated by the expressions *two hours*, *three hours*, etc.



**PHARMACY.**

**COURSE A.**—*Theory and Practice of Pharmacy.*—Five hours a week, Second Semester. Lectures and Recitations. Professor STEVENS.

History of pharmacopœias and recitations from the U. S. Pharmacopœia. Specific gravity, weights, measures and their relations to each other. Problems in parts by weight from chemical proportions, weights, volumes and percentages of strength. Apparatus and manipulations used in generating and regulating heat for pharmaceutical use. Solutions, filtrations, decantation, clarification, pulverization, granulation, crystallization, sublimation, percolation, distillation, dialysis, etc. Apparatus and specimens from the University museums, diagrams, etc., are used in illustrating the above subjects.

**COURSE B.**—*Operative Pharmacy and Pharmaceutical Preparations.*—Daily laboratory work and recitations three times a week, making *eight hours* of credit. First Semester. To be preceded by Course A in Analytical Chemistry, completed clear of conditions. Professor STEVENS.

Classification of official preparations; laboratory study of pharmacopœial methods; recitations upon manufacturing procedures. The satisfactory production of about one hundred and fifty preparations required, embracing the classes of the U. S. Pharmacopœia and National Formulary, galenicals, scales, and synthetic chemicals, from the simplest to the most difficult. Chemical proportions calculated into parts by weight and by volume, with practical adjustment of conditions carried out in the laboratory work of the student. Critical application of the pharmacopœial tests to commercial articles as well as to the preparations of the student. The daily laboratory exercise takes about four hours.

**COURSE C.**—*Pharmaceutical Technology and Prescription Practice.*—Four hours of credit. Second Semester. Lectures and Work at the Prescription Stand, the time taken in the prescription exercises being dependent upon the previous experience and the ability of the student. Professor STEVENS.

The technology of inorganic and organic articles used in pharmacy. Sources, manufacture, commercial history, prevalent impurities, standards of purity and strength, official tests, technical and public uses. Doses, medicinal and poisonous. The Art of Dispensing. *Fac simile* of prescriptions will be thrown upon the screen by the aid of a stereopticon, giving practice in the chirography of physicians, and criticism of quantities, doses, errors, incompatibilities, and methods of compounding.

**PHARMACOGNOSY.**

**MICRO-BOTANY, PHARMACOGNOSY, PHARMACOLOGY, THERAPEUTICS.**

**COURSE A.**—*Micro-botany.*—Two hours of credit. First Semester. Work in the botanical laboratory twice a week, two hours each time. Professor SCHLOTTERBECK.

Structural botany and the delineation of cell-structure, and cell-contents, tissues and tissue systems. Wherever possible material for demonstration is selected from plants or parts of plants which find medicinal application. Minute histological study of important crude drugs, their substitutes and adulterants. Practical work in the microscopical examination of powder-drugs, foods, and condiments, and the detection of adulterations. Reports upon commercial samples of same obtained in open market and upon specially prepared unknown mixtures.

**COURSE B.**—*Micro-botany.*—*Three hours of credit.* Second Semester. Work in the botanical laboratory twice a week, two hours each time, and a lecture once a week. Continuation of Course A. Professor SCHLOTTERBECK.

The course is concluded by original investigation upon important crude drugs. A set of representative permanent mounts is prepared by each student.

**COURSE C.**—*Pharmacognosy.*—*Three hours of credit.* First Semester. Professor SCHLOTTERBECK.

Lectures, demonstrations and recitations upon the botanical and geographical source, history, methods of cultivation, collection, and preparation, and the active constituents of all important medicinal plants. Practical exercises in the ready recognition of the various articles discussed in the lectures.

**COURSE D.**—*Materia Medica.*—*Two hours a week.* First Semester. May be taken in the same semester as Course C. Lectures and Recitations. Dr. WALLACE.

Pharmacology, Therapeutics, Posology, and Toxicology. The classification and history of medicines. Their physiological action, therapeutic applications, their preparations and doses. The symptoms of poisoning and the use of antidotes.

**COURSE E.**—*Pharmacognosy.*—*Two hours a week.* Second Semester. Continuation of Course C. Professor SCHLOTTERBECK.

**COURSE F.**—*Materia Medica.*—*Two hours a week.* Second Semester. May accompany Course E. Continuation of Course D. Dr. WALLACE.

### GENERAL CHEMISTRY.

**COURSE A.** [Course 1.]—*Elementary Inorganic Chemistry*, Descriptive and Experimental. *Three hours of credit.* (Advanced credit from high schools upon examination.) First Semester. Mr. HIGLEY.

**COURSE A<sup>1</sup>.** [Course 2.]—Laboratory work in General Inorganic Chemistry. *Credit arranged with instructor.* Mr. HIGLEY, Mr. LICHTY, and Dr. SHERMAN. This course must be preceded or accompanied by Course A or an equivalent.

COURSE B. [Course 5].—*Inorganic Chemistry, Descriptive and Experimental.* Continuation of Course A. *Five hours* of credit. Second Semester. Lectures and recitations. Professor FREER.

COURSE AA.—*Inorganic Chemistry, Descriptive and Experimental.*—*Five hours* of credit, lectures and quizzes five times a week. First Semester. Professor FREER.

A beginning course extending further than Course A.

COURSE C.—*Physics.*—*Four hours* of credit, lectures and recitations four times a week. Advanced credit from high schools upon examination. Second Semester. Mr. LICHTY.

## ANALYTICAL CHEMISTRY.

### QUALITATIVE ANALYSIS, QUANTITATIVE ANALYSIS, TECHNICAL ANALYSIS.

COURSE A. [Course 1].—*Qualitative Analysis.*—Laboratory work and recitations, each five times a week, giving *ten hours* of credit. Either First or Second Semester. May be divided between the two semesters, as a five-hour course in each [Course 3 and 3a]. Should be preceded or accompanied by a course in general chemistry, or by the study of chemistry with laboratory method in the high school. Professor JOHNSON.

The study of chemical change, in the reactions of metallic salts and other inorganic substances and as represented by equations. The comparison of solubilities, and the available means of separation. Methods of analysis and their relation to methods of synthesis. Reactions of oxidation and reduction. Analysis of mixtures.

COURSE B. [Course 4].—*Quantitative Analysis.*—Laboratory work five times a week, and lecture-recitations twice a week, giving *seven hours* of credit. Either First or Second Semester. Must be preceded by Course A, completed clear of conditions. Professor CAMPBELL.

The determination of specific gravities; volumetric estimations; gravimetric determinations and separations. The results to come within specified limits of recovery. The laboratory exercises take from three to four hours each.

COURSE C. [Course 2].—*Advanced Qualitative Analysis.*—Laboratory work three times a week, and recitations twice a week, giving *Five hours* of credit. Second Semester. May follow Course A, of which it is a continuation. Professor JOHNSON.

COURSE D. [Course 5].—*Advanced Quantitative Analysis.*—Laboratory work five times a week, a *five-hour* course. Either First or Second Semester. Must be preceded by Course B, and requires special permission. Professor CAMPBELL.

**COURSE E.** [Course 6.].—*Iron and Steel Analysis.*—Laboratory work, a *five-hour* course. Either First or Second Semester. Open to those who have completed Course B and received special permission. Professor CAMPBELL.

**COURSE F.** [Course 8.].—*Analysis of Minerals.*—Qualitative and quantitative laboratory work for *five hours* of credit. Either First or Second Semester. Must be preceded by Courses A and B and requires special permission. Professor CAMPBELL.

**COURSE G.**—*Water Analysis.*—Laboratory work three times a week and reading, a course of *three hours* of credit. Mineral water analysis, and the chemical methods of sanitary water analysis. Either First or Second Semester. Must be preceded by Course B, and requires special permission. Professor PRESCOTT and Dr. GOMBERG.

#### SHORTER COURSES IN QUALITATIVE CHEMISTRY FOR STUDENTS NOT CANDIDATES FOR A DEGREE.

**COURSE H.**—*Three Months' Course.*—*Qualitative Chemistry.*—Laboratory work and recitations, each five times a week. Each laboratory exercise takes three or four hours, the recitation one hour, both in the time from 1 to 5 P. M. *Begins September 27, January 10, April 3.*

The notation of salts; solubilities as concerned in the inorganic reactions studied group by group; chemical equations in precipitation, solution, and gas generation; studies of chemical change resulting in "*incompatibilities.*" A limited number of "unknowns" in actual analysis, not earlier than the last month of the course. The purpose of the course is an acquaintance with chemical change, rather than qualifications as an analyst, the course being too brief for the latter.

**COURSE I.** [Course 3.].—*First Steps in Qualitative Analysis.*—Laboratory work three times a week, recitations twice a week. First or Second Semester. Professor JOHNSON. This course constitutes about one-half of Course A in Analytical Chemistry. It gives a little more analytical work than the three months' course.

### ORGANIC CHEMISTRY.

#### INCLUDING ANALYTICAL AND APPLIED ORGANIC CHEMISTRY.

**COURSE A.** [Course 10.].—*Carbon Compounds.*—*Five hours* of credit. First Semester.—To be preceded by a course in General Chemistry, and one in Analytical Chemistry. Lectures. Professor PRESCOTT.

A systematic study of organic compounds, their modes of synthetic production, the proofs of their structure, and their relationships. An introduction to the reference literature of organic chemistry. With each lecture there is a short colloquium upon the text-book, and a brief essay drawn from reference literature written and read by a member of the class,

COURSE B. [Course 11.].—*Organic Preparations.*—Two hours of credit. Either First or Second Semester. May accompany or follow Course A. Laboratory work in organic synthesis, employing about six hours each week. Dr. GOMBERG and Mr. TROWBRIDGE.

Course B may be taken in part, or extended, to make *one hour or three hours* of credit.

COURSE C. [Course 12.].—*Organic preparations and Ultimate Analysis.*—Five hours of credit. Either First or Second Semester. May accompany or follow Course A; either in addition to Course B or instead of the latter. Laboratory work five times a week. A good command of the work of organic combustions can be obtained in this course. Dr. GOMBERG and Mr. TROWBRIDGE.

Courses B and C may be continued, each for the same time and credit additional, in either semester, constituting respectively Course BB [11a] and Course CC [Course 13].

COURSE D. [Course 14.].—*Organic Analysis, and Drug Assaying.*—Five hours of credit. Second Semester. To be preceded by Course A and by a course in quantitative analysis (Course B of Analytical Chemistry). Laboratory work with Lectures. Dr. GOMBERG.

Qualitative and quantitative analysis for alkaloids, and certain other representative carbon compounds, drug assaying, the outlines of fat analysis. With sub-courses in technical organic analysis, adapted to the purposes of the student.

COURSE DD.—*Sanitary and Commercial Organic Analysis*—Five hours of credit. First or Second Semester. Continuation or alternative of Course D. Laboratory work and reading. May be devoted to Food Analysis or to some branch of commercial analysis, such as that of Nostroms on the Market, or that of Paint Materials. Professor PRESCOTT and Dr. GOMBERG.

COURSE E.—*Toxicology.*—Inorganic and Organic. Chemical and microscopical. Three hours of credit. Either First or Second Semester. Must be preceded by Course D and the pre-requisites of that course. Laboratory work and reading. Professor PRESCOTT and Dr. GOMBERG.

#### BEGINNING COURSES IN ORGANIC CHEMISTRY IN SECOND SEMESTER.

Obtained only by permission. Given primarily for classes in other Departments of the University. Candidates for a degree begin the subject with Course A and do not require these courses.

COURSE F<sup>1</sup>.—*Lectures on Organic Chemistry* three times a week.—Two hours of credit. Mr. TROWBRIDGE.

COURSE F<sup>2</sup>. [Course 28.].—*Lectures on Organic Chemistry* five times a week.—[Course 28.] Four hours of credit. Professor PRESCOTT.

**PHYSIOLOGICAL CHEMISTRY.**

**COURSE A.—*Physiological Analysis.***—A course of *five hours* of credit, obtained in *three months*. Begins September 27, January 10, April 3. Must be preceded by a course in qualitative analysis, and one in organic chemistry. Laboratory work five times a week, and lectures three times a week,—all between 1 and 5 P. M. Professor NOVY.

The chemistry of normal and abnormal urine, including the synthetic preparation of urea and the most important members of the uric acid group, and methods for the quantitative determination of urea, uric acid, phosphates, chlorides, sulphates, sugar and albumin; the chemistry of the digestive liquids of the stomach, etc., etc.

**COURSE B. [Course 7.]—*Physiological Chemistry*** including the Analysis of Urine.—*Seven hours* of credit. Laboratory work daily and lectures three times a week, the course extending through the semester. Either First or Second Semester. Must be preceded by a course of qualitative analysis and a course in organic chemistry. And it is advisable that quantitative analysis should precede this course. Professor NOVY.

**COURSE C. [Course 3.]—*Bacteriology.***—*Five hours* of credit. Laboratory work daily for *three months*. Lectures are also given in First Semester [Course 2]. The course begins September 27, January 10, April 3. Professor NOVY.

**PHARMACOLOGY.**

**COURSE A.—*Pharmacological Laboratory.***—*Three hours* of credit. Obtained only by permission. Laboratory work and reading. To be preceded by Course A and Course D in organic chemistry. It is necessary to have had study of physiology. Professor CUSHNY.

**COURSE B.—*Physiology.***—*Five hours* of credit. First Semester. Obtained by permission. Lectures and recitations. Must be preceded by a course in organic chemistry. It is also desirable that the student have had studies in anatomy. Professor LOMBARD.

**MINERALOGY.**

**COURSE A.—*Crystallography.***—Twelve lectures supplemented by practical exercises. In Second Semester, beginning on a date to be announced. Professor PETTEE.

**COURSE B. [Course 1.]—*Mineralogy.***—*Two hours* of credit. Includes Course A. Either First or Second Semester. To be preceded by a course in general chemistry. Lectures and practice.

**COURSE C. [Course 2.]—*Mineralogy.***—*Five hours* of credit. Includes Course B as well as Course A. Second Semester. To be preceded by a course in general chemistry and a course in analytical chemistry. Lectures and practice. Professor PETTEE.

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**PHYSICS.**

**COURSE A.** [Course 1.]—*Five hours.*—Second Semester. Open to those who have had the B. S. entrance examination in physics, and to all others who have had sufficient preparation. A knowledge of plane trigonometry is indispensable. Mechanics, Sound and Light. Lectures. Professor REED.

**COURSE B.** [Course 2.]—*Four hours.*—First Semester. Must be preceded by Course A in Physics and by a course in general or analytical chemistry. Electricity, Magnetism, and Heat. Lectures. Professors CARHART and REED.

**RESEARCH.**

The work of students is conducted in research in the several branches of science and technology, by the professor in charge, governed by the provisions of the Faculty. A student duly prepared by previous training, may be admitted to any work of investigation for which he is suited, by permission of the professor in charge of the work, subject to the regulation of the School. The period for research is limited, for undergraduates, to the final semester in the two years' course, and the senior year in the four years' course. Graduates of other colleges may enter at once upon research in this School. Holders of a Fellowship in this School must devote themselves wholly to research, and Graduate Students are constantly engaged in this manner. The research for a degree requires experimental work to obtain data not previously published. The indexing of chemical and pharmaceutical literature, in form for publication, is carried as a necessary adjunct of research.

**COURSES IN RESEARCH,** in either First or Second Semester, and under the provision named above, are entitled to such *number of hours* of credit as shall be determined by the professor in charge of the work. In this determination the quality of the work is to be taken as a joint factor with the time it has employed.

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**FELLOWSHIPS.**

**THE STEARNS' FELLOWSHIP.**—Established in 1895, by means of a gift made for this purpose by Messrs. Frederick Stearns & Company, of Detroit, Appointments to the Fellowship are made by the Faculty from graduate students who have the qualifications for the work, wholly in research.

The Committee of Revision of the United States Pharmacopœia receive special reports from the work of investigation in this School. A graduate student is employed for his entire time upon a given research, and one or more advanced students selected for their accuracy and faithfulness have the opportunity of assisting in the same work.

Other special and technical investigations are carried on, in a manner to give graduate students of ability and care very favorable opportunities for practical training as experts. Six separate laboratory apartments, carefully fitted with the latest appliances, are devoted to special researches.

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**SUCCESSION OF STUDIES.****I. IN THE COURSE OF TWO YEARS.**

*First Year, First Semester.*—General Chemistry AA; Analytical Chemistry A (qualitative); Pharmacognosy A (micro botany).

*First Year, Second Semester.*—Analytical Chemistry B (quantitative); Pharmacognosy B (micro-botany); Pharmacy A.

*Second Year, First Semester.*—Pharmacy B (laboratory and lectures); Organic Chemistry A; Pharmacognosy C, and D (materia medica).

*Second Year, Second Semester.*—Organic Chemistry D (drug assaying); Pharmacy C (technology and prescription practice); Pharmacognosy E, and F (materia medica); Mineralogy A (crystallography); Research work or an elective study.

The studies enumerated above are all required for the degree of Pharmaceutical Chemist. They constitute an amount of work which taxes the full working power of a student of average quickness and strength of scholarship. Students who desire a longer time for the same work may



apply for it on entering college, or during the first semester, and may obtain from the Faculty a distribution of all the work through *five semesters, or six semesters*, as found advisable in each case.

## II. IN THE COURSE OF FOUR YEARS.

The student is limited by rule to *sixteen hours* of credit (sixteen exercises per week) in each semester.

The student must present, at the beginning of each Semester, his election of studies for that semester, using a blank provided for that purpose, as directed on page 13. The elections of studies are subject to approval of the Faculty, who will take action upon them without delay. The studies prescribed for graduation are given on page 26. All the studies of the School are open to election.

### ADVISORY SEQUENCE OF STUDIES.

Students who enter the School prepared in Latin, in German, and in chemistry, as high school studies, are advised to arrange their work in accordance with the scheme printed below. Students who enter with French instead of German, or without chemistry, are advised to follow the same scheme in general, with such modifications as may be necessary.

*First Year, First Semester*.—Mathematics [1a], three hours; French four hours; German, two hours; Pharmacognosy A, two hours; General Chemistry [2], three hours; English [1] two hours.

*First Year, Second Semester*.—Mathematics [2a], four hours; Physics [1], five hours; Pharmacognosy B, three hours; German, two hours.

*Second Year, First Semester*.—Analytical Chemistry A, ten hours; Pharmacognosy C, two hours; French, two hours; Mineralogy B, two hours.

*Second Year, Second Semester*.—Analytical Chemistry B, seven hours; Pharmacy A, three hours; Pharmacognosy E, two hours; General Chemistry, B, five hours.

*Third Year, First Semester*.—Pharmacy B, ten hours; Organic Chemistry A, and a part of B, six hours.

*Third Year, Second Semester*.—Organic Chemistry D, five hours; Pharmacy C, four hours; Elective studies, not to exceed seven hours, taken from the following: Physiological Chemistry, A, five hours, or C, five hours; Organic Chemistry BB, two hours, or C, five hours; French or German; Physics [2], five hours.

*Fourth Year, First Semester*.—Pharmacognosy D, three hours; Pharmacology A, three hours, and B, five hours. Elective studies, and studies in research.

*Fourth Year, Second Semester*.—Pharmacognosy E and F, five hours; Analytical Chemistry G, three hours; Research.

### III. IN SELECTED STUDIES.

Students not expecting to graduate can enter for selected studies at the beginning of the First Semester, September 27, and at the beginning of the Second Semester, February 13. Also for certain studies, on January 10 and on April 3.

For pharmaceutical purposes, the student who is limited to one year's college work, can do well in taking the regular studies of the First Year in the Course of Two Years as stated on page 22.

Of the shorter courses usually most available for students having limited time in college, the following may be named:

- Course A in Pharmacognosy. First Semester (page 15).
- Course C in Pharmacognosy. First Semester (page 16).
- Course A in General Chemistry. First Semester (page 16).
- Course AA in General Chemistry. First Semester (page 17).
- Course F in Organic Chemistry. Second Semester, (page 20).
- Course [28] in Organic Chemistry. Second Semester (page 19).
- First Steps in Qualitative Analysis. Either Semester (page 18).

All the work of the School is open to students not candidates for a degree, so far as they are prepared to engage in it.

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### EXAMINATIONS.

The examination upon each Course of instruction is held at the time the work of that Course is completed. The examinations, therefore, are held mostly at the end of the semesters, in February and in June.

The result of an examination is reported by the Professor in charge, for each student enrolled, to the Faculty, in terms as follows:

*Passed.*—Entitling the student to full credit for the course.

*Conditioned.*—Imposing some specified condition, usually to take another examination, the condition to be fulfilled before credit can be given.

*Provisionally Passed.*—Withholding the credit from the course until the student shall have done better work in other studies, in the judgment of the Faculty as a whole, who can change the record of Provisionally Passed to a record of Passed, or Conditioned, or Not Passed, whenever such change shall be justified by the scholarship of the student in his several studies.

*Not Passed.*—Requiring the student to go over the regular exercises of the study again before he receives another examination.

*Absent.*—With statement of the cause of absence; if the student have left the class, stating at what time; or stating if absent without excuse or explanation.

## REQUIREMENTS FOR GRADUATION.

[Experience in the business of pharmacy is not made a requirement for a degree.]

### I. *With the Degree of Pharmaceutical Chemist.*

[For requirements of college entrance, see page 10.]

#### FIRST YEAR, FIRST SEMESTER.

	Hours of Credit.*	Hours in Lect. & Rec.	Hours in Laboratory.
General Chemistry, Course AA, . . . . .	5	90	
Pharmacognosy, Course A, . . . . .	2	36	
Analytical Chem., Course A, <i>Qual.</i> , . . . . .	10	90	360
	—	—	—
Total for First Semester, . . . . .	17	216	360

#### FIRST YEAR, SECOND SEMESTER.

Pharmacy, Course A, . . . . .	5	90	
Pharmacog., Course B, <i>Micro-botany</i> , . . . . .	3	18	72
Analytical Chem., Course B, <i>Quantitative</i> , . . . . .	7	36	360
Mineralogy, Course A, <i>Crystallography</i> , . . . . .	1	6	12
	—	—	—
Total for Second Semester, . . . . .	16	150	444

\* "Hours of Credit" are the number of exercises *per week* for one semester. See page 14.

## SECOND YEAR, FIRST SEMESTER.

Pharmacy, Course B, <i>Preparations</i> , . . . .	8	72	288
Organic Chemistry, Course A, . . . .	5	90	
Pharmacognosy, Course C, . . . .	2	36	
Pharmacog., Course D, <i>Materia Medica</i> , . . . .	2	36	
		<hr/>	
Total for First Semester, . . . .	17	234	288

## SECOND YEAR, SECOND SEMESTER.

Pharmacog., Course F, <i>Materia Medica</i> , . . . .	2	36	
Organic Chem., Course D, <i>Analysis</i> , . . . .	8	144	288
Pharmacognosy, Course E, . . . .	2	36	
Pharmacy, Course C, <i>with Prescrip. Practice</i> , . . . .	4	72	
Investigations, or elective studies, . . . .	2		72
		<hr/>	
Total for Second Semester, . . . .	18	288	360
Totals of required work, . . . . .	68	888	1,452
		<hr/>	
Hours in laboratories and lectures, . . . .			2,340

2. *With the Degree of Bachelor of Science in Pharmacy.*

[For requirements of college entrance, see page 11.]

[For the advisory sequence of studies, see page 23.]

In English: Courses [1], [1a].

In German: (a) for those who entered *without* German, Courses [1], [2]; or (b) for those who enter *with* German, four hours.In French: (a) for those who entered *without* French, Courses [1], [2], or an equivalent; or (b) for those who entered *with* French, four hours.

In Mathematics: Courses [1a], [2a].

In Physics: Course A [1].

In General Chemistry: (a) for those who entered *without* chemistry, Courses A, B; or (b) for those who entered *with* chemistry, Course B.

In Analytical Chemistry: Courses A, B.

In Organic Chemistry: Courses A, D.

In Mineralogy: Course B.

In Pharmacognosy: Courses A, B, C, D, E, F.

In Pharmacy: Courses A, B, C.

From the other courses offered in the School, or in other departments of the University, the student must choose with the approval of the Faculty and complete enough including those above prescribed to make in all *one hundred and twenty* hours of credit.

**LIBRARY, BOOKS OF REFERENCE, AND TEXT-BOOKS.**

The School provides an extensive library, the main portion of which is shelved and indexed in the General Library Building of the University. The entrance to the Library is within one hundred feet of the entrance to the main building of the School of Pharmacy. The Library is open to readers twelve and one-half hours daily except Sundays and legal holidays during the collegiate year, and six hours daily during the three months of the summer vacation.

The Library provides the complete sets of the journals, the original repositories of the sciences related to pharmacy, as well as the current periodicals of the profession, encyclopædias and hand-books of chemistry and pharmacy, and the latest works of value in study. The works of reference in actual use in the School may be estimated at about four thousand volumes. The medical library in the same building, numbers 7,762 volumes, besides unbound pamphlets. In all the general library contains 92,112 volumes and 16,065 unbound pamphlets.

A working library is also provided, in a reading room of the Chemical Building, with over one thousand works of immediate reference, duplicates of those in the General Library. These works are in constant use by students for reference reading upon their laboratory work and in preparing for their recitations. The files of current numbers of the journals of chemistry and pharmacy are also provided in the reading room.

The Class Text-books of the School, those which the student should obtain for himself, can be obtained in the book-stores in this University town at rates lower than those customary in the general trade of the large cities. These text-books include the following: In General Chemistry, Freer. In Qualitative Analysis, Prescott and Johnson. In Quantitative, Cheever and Smith's Select Methods. In Pharmacy, the U. S. Pharmacopœia. In Botany, Bastin.

In Pharmacognosy, Flückiger, Maisch. In Organic Chemistry, Bernthsen. In Organic Analysis, Prescott.

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### THE MUSEUM.

This comprises collections in educational chemistry, the chemical industries, pharmacy, and pharmacognosy. It occupies a floor space of 2,500 square feet in the chemical building, and is provided with permanent cases.

The principles of chemical science are illustrated by groups of synthetic products, as progressive formations, and by related compounds, both natural and artificial.

The chemical industries are represented by collections of the materials and the successive products of manufacture, and the resources and methods of industrial art. The outlines of chemical technology are presented with models and plans, giving object lessons in the modern production of alkalies and acids, dyes and pigment, soaps, sugars, starches, distillates, etc.

IN PHARMACOGNOSY, the collection of medicinal plants is extensive and well chosen for instruction both in botany and in commercial history. This collection is being rapidly enriched from all parts of the world. It is used in connection with the series of working supplies in daily use in the classes. The crude drugs are displayed in comparison with their active constituents, each in its proportional quantity.

Pharmacy is exemplified in the preparations of the pharmacopœia, the national formulary, and the appliances for skillful manipulation.

Of all these collections a good share originates in the work of students engaged in special lines of study and research.

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### FEES AND EXPENSES.

THE MATRICULATION FEE is \$10 for residents of Michigan, and \$25 for others. It is paid but once and gives

privileges of permanent membership in any Department of the University.

THE ANNUAL FEE is \$35 for residents of Michigan, and \$45 for others. It is paid the first year, and each year thereafter.

In the Chemical Laboratory the student pays by account for the chemicals and apparatus which he uses. The expense varies with prudence and economy, the average amount being about one dollar and twenty cents per week. Advance payment is required from time to time; the first deposit being twenty dollars.

At graduation there is a diploma fee of \$10.

Students obtain board and lodging in private families for from three to five dollars a week. Room rent varies from seventy-five cents to two dollars a week for each student. Students arriving in Ann Arbor can obtain information in regard to rooms and board by calling at the Steward's office. A register of rooms is also kept at Newberry Hall, under the care of the Student's Christian Association.

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### CORRESPONDENCE.

Letters of inquiry may be addressed to Professor A. B. Stevens, Secretary, or to Professor Prescott, Dean, School of Pharmacy, Ann Arbor, Mich.

# Students in 1897-98.\*

## RESIDENT GRADUATES.

NAME.	DEGREE.	RESIDENCE.
Clarence Henry Baum, B.S. (Phar.)	M.S.(Phar.)	<i>Danville, Ill.</i>
Evi Dunn Benjamin, Ph.C., 1897, B.S.		<i>Pontiac.</i>
†Harry Mann Gordin, Ph.D., <i>University of Berne,</i>		<i>San Francisco, Cal.</i>
Charles Lawrence Sargent, B.S., <i>R. I. Coll. of Agr. and Mech.</i> <i>Arts,</i>		<i>Peace Dale, R. I.</i>
Abraham VanZwaluwenburg, Ph.C., 1887, B.S.(Phar.), <i>Holder of the Stearns Fel-</i> <i>lowship,</i>	M.S. (Phar.)	<i>San Louis, Mexico.</i>

## UNDERGRADUATES.

NAME.	DEGREE.	CREDIT.	RESIDENCE.
John Newton Adams,	Ph.C.	34	<i>Sault Ste. Marie.</i>
Lyman Frederick Barlow,	Ph.C.		<i>Hastings.</i>
George Woodbury Beisel,	Ph.C.	34	<i>Monroe.</i>
Harry Denman Berry,	Ph.C.		<i>Mount Sterling, Ky.</i>
Carl J. Biehl,	Ph.C.	34	<i>Sandusky, O.</i>
Walter Henry Blome,	Ph.C.	34	<i>Monroe.</i>
Walter Stephen Brooks,	B.S.(Phar.)	17	<i>Detroit.</i>
LeRoy Campbell,	Ph.C.		<i>Council Bluffs, Ia.</i>

\* The abbreviations in the column headed DEGREE indicate the degree for which the student is studying. Where no abbreviation is given, the student is pursuing miscellaneous studies without being registered as a candidate for a degree. The figures in the column headed CREDIT indicate the number of hours of work taken by candidates for degrees prior to the beginning of the current academic year, 1897-98, and completed without conditions, or credited to them on advanced standing. By an hour of work is meant the equivalent of one exercise a week for one semester.

† Engaged upon the revision of the United States Pharmacopœia, for Research Committee "D," Section II.



Lee Hamilton Cotton,	Ph.C.		<i>Perry, N. Y.</i>
Carl Patterson Cona,	Ph.C.	9	<i>Van Wert, O.</i>
John Asa Coram,	Ph.C.	34	<i>Springfield, O.</i>
James M. Cory,	Ph.C.		<i>Lima, O.</i>
Aimée Coulter,	Ph.C.	34	<i>Chicago, Ill.</i>
Lavern Otis Cushing,	Ph.C.		<i>Dexter.</i>
Harry Edwin Douglas,	Ph.C.	34	<i>Paw Paw.</i>
Charles Anton Duert,	Ph.C.		<i>Benton Harbor.</i>
Fred Rowland Dunning,	Ph.C.		<i>Vicksburg.</i>
John Condit Dwyer,			<i>Ann Arbor.</i>
George Eckel,	Ph.C.		<i>Petoskey.</i>
Lemuel William Famulener,	Ph.C.		<i>Galesburg, Ill.</i>
Herman Welch Gilbert,			<i>Fresno, Cal.</i>
Charles Dwight Goff,	Ph.C.	34	<i>Fremont, Neb.</i>
Oscar William Gorenflo,	Ph.C.	37	<i>Detroit.</i>
John Maxwell Gould,	B.S.(Phar.)		<i>Hastings.</i>
Alex Donald Gundry,	Ph.C.		<i>Grand Blanc.</i>
Oscar Henry Haarer,	Ph.C.		<i>Ann Arbor.</i>
Herbert D. Herrington,	Ph.C.		<i>Parma.</i>
Mark Butcher Hawes,	Ph.C.	34	<i>Parma.</i>
Bert Leroy Hayden,	Ph.C.	34	<i>Ann Arbor.</i>
George Herbert,			<i>South Lake Linden.</i>
Harry Cook Hewitt,	Ph.C.		<i>Jackson.</i>
Clinton Whitney Hibbard,	Ph.C.		<i>Azusa, Cal.</i>
Ralph Hicks, Jr.,	Ph.C.		<i>Dollar Bay.</i>
Henry C. Hitchcock,	B.S.(Phar.)	27	<i>Ann Arbor.</i>
Genevra Starr Hoadley,	Ph.C.		<i>Montpelier, O.</i>
Raymond Edward Kanouse,	Ph.C.	34	<i>Manistee.</i>
Philip Kephart,	Ph.C.		<i>Berrien Springs.</i>
Kurt Kling,			<i>Detroit.</i>
William Kremers,	Ph.C.	38	<i>Holland.</i>
Thomas Ambrose Major,	B.S.(Phar.)	30	<i>Manistee.</i>
Carl Metzger,	Ph.C.	18	<i>Winchester, Ill.</i>
Leroy Earl Minot,	Ph.C.		<i>Danville, Ill.</i>
Olney Ray Morse,	Ph.C.		<i>Sanilac Centre.</i>
Ralph Clarke Nowland,			<i>Leadville, Col.</i>
David William Payton,	Ph.C.		<i>Almont.</i>
Charles Bert Pettibone,	Ph.C.		<i>Farmington.</i>
Elmer Albert Phillips,	Ph.C.	27	<i>Sainclairville, N. Y.</i>
Herbert Freeburn Prescott,			<i>Ann Arbor.</i>
George Rogers,	Ph.C.		<i>Amsterdam, N. Y.</i>
James Clayton Rusterholtz,	Ph.C.		<i>Sturgis.</i>
Charles Ryan,			<i>Fort Collins, Col.</i>

Earl Alfred Ryan,	Ph.C.		<i>Newberry.</i>
William Barie Saladin,			<i>Detroit.</i>
Frederick William Sauer,	Ph.C.		<i>Calumet.</i>
Philip Schaupner,	Ph.C.	34	<i>Ann Arbor.</i>
Edgar Schiller,	Ph.C.	36	<i>Ida Grove, Ia.</i>
Hugo Joseph Schellinger,	Ph.C.		<i>Mishawaka, Ind.</i>
Henry Phillip Schmidt,	Ph.C.	34	<i>Anacortes, Wash.</i>
Frank Philip Seabury,	B.S.(Phar.)		<i>Paw Paw.</i>
Paul George Seibert,	Ph.C.		<i>Saint Johns.</i>
Caroline Barbara Service,	Ph.C.	31	<i>Ann Arbor.</i>
Leonard Short,	Ph.C.	34	<i>Manistee.</i>
Burnette Burgoon Smith,	Ph.C.		<i>Fremont, O.</i>
Leonard Fred Steenman,	Ph.C.		<i>Howard City.</i>
Will Earl Sullivan,	Ph.C.	14	<i>Ann Arbor.</i>
Burton Allen Sweet,	B.S.(Phar.)		<i>Carson City.</i>
Herbert Eugene Taber,	Ph.C.	26	<i>West Kingston, R. I.</i>
Arthur Fowler Vickery,	Ph.C.	38	<i>Charlotte.</i>
Charles Franklin Watkins,	Ph.C.	69	<i>Reed City.</i>
William Peter Welker,			<i>Leetonia, O.</i>
John Ignatius Welsh,			<i>Kalamazoo.</i>
William Wilson, Jr.,	Ph.C.	30	<i>Amsterdam, N. Y.</i>
Fred Leroy Woods,	Ph.C.		<i>Brownsville.</i>
Sam Herman Zimmerman,	Ph.C.	84	<i>Helena, Mon.</i>

## Register of Alumni.

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The Chemical Laboratory of the University opened to students in 1856. A course in operative pharmacy was added to the laboratory curriculum in 1869, and was held open to those who had completed at least one of the chemical courses. From the first the laboratory was provided for the use of students of all Departments of the University, so far as chemical studies enter into the curriculum of each, and this provision in common for all the departments has continued to the present. From 1860 to 1868 Certificates of Proficiency were granted to students of any department who had completed with credit one or more of the laboratory courses of experimental study and had passed the chemical examinations. Of those who received the certificates some have followed chemistry as a profession, and their names so far as known are given with residence and occupation in the Alumni Register of Practicing Chemists of the University.

The laboratory course in operative pharmacy had been taken by students of the Department of Medicine, students of the Department of Literature and Science, and by special chemical students, for eight years, and to the number of one hundred and twenty-one persons, before the organization of a Department of Pharmacy. Of these early students of chemistry and pharmacy a directory of residence and occupation cannot now be given.

The School of Pharmacy was organized in 1868, at first as a polytechnic division of the Department of Literature, Science, and the Arts. The character of the School, and its

power as a college of pharmacy to confer degrees, rest upon (1) the acts of the Regents of the University in 1868 and 1876, sustained by (2) the laws of the State in 1851, and (3) the Constitution of Michigan, in accord with the act of Congress providing for the admission of the State. The degree of Pharmaceutical Chemist, with the diploma of graduation in pharmacy, was first conferred in 1869.

The Register of Alumni contains the names of all graduates in pharmacy at the University, 1869 to 1896, and does not include any others. The collegiate honors named in the Register are those held in addition to the degree of Pharmaceutical Chemist (Ph.C.).

In the Register a proprietor in Pharmacy is designated as a pharmacist only; a joint-proprietor as a "pharmacist in the company of" the house designated; and one employed in pharmacy is recorded as "with" the proprietor named.

It is desired that errors or deficiencies in the Register, especially such as concern residence and occupation, shall be immediately reported with information to the Secretary of the Department. The kind services of Alumni are solicited in the endeavor to keep the registration as complete as possible. A mark of interrogation (?) following any name is given as a request for the postoffice address.

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### THE ALUMNI REGISTER FROM 1869 TO 1895.

This complete directory of the graduates, their present residences, occupations, positions, etc., revised in 1895, is issued separately. It will be furnished free of charge on application to the Secretary, Prof. A. B. Stevens, Ann Arbor, Mich.

The Register of the Graduates of 1895 and 1897, and a list of changes of address, etc., of all alumni during the past two years, is given in this Announcement.

The Alumni Register will continue to be kept in revision and publication as heretofore, but will be issued separately.

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## OTHER CATALOGUES OF GRADUATES AND STUDENTS.

A Catalogue of Chemists, revised from time to time, is furnished to applicants. It is a professional catalogue of practicing chemists and teachers in chemistry who have been educated at this University. The "General Catalogue of Officers and Students of the University," 1837 to 1890, 472 pages, price \$1.75 in cloth, can be obtained by addressing the Steward of the University. Besides the names of the Graduates, it contains the names of Non-Graduate Students in the School of Pharmacy, to the number of 277, with the records of their residence and occupation so far as obtained.

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## GRADUATES WITH THE DEGREE OF PHARMACEUTICAL CHEMIST.

College degrees held in addition to that of Ph.C. are given with the year when they were conferred, after the names of graduates who have received them.

1895.

BOWERFIND, HENRY J.—Pharmacist with Meyer Bros., Fort Wayne, Ind.

BUNN, CLAUDE M.—Sometime in the firm of Bunn & Poel Drug Co., 202 W. Main St., Kalamazoo, Mich. Pharmacist, Cocoa, Fla.

DE JONGE, CORNELIUS.—Pharmacist with A. H. Lyman Co., Manistee, Mich., until 1897. Assistant Chemist with Edward R. Squibb & Sons, 39 Doughty St., Brooklyn N. Y.

DOEHNE, GEORGE, Jr.—Sometime with A. T. Hall, 428 Wabash St., St. Paul. Pharmacist in St. Paul, Minn.

DOTY, GILBERT A.—Pharmacist with Doty Bros., 284 Warren Ave. W., Detroit, Mich.

DRAKE, CHARLES F.—Graduate Student in studies for B.S. in Pharmacy in 1895-96. With Swift & Co., Union Stock Yards, Chicago, Ill.

- HERZER, HENRY A.—Manager of a pharmacy in Eaton Rapids, Mich.
- JUDY, JOHN N.—Pharmacist for Queen City Pharmacy, Cumberland, Md.
- KNAPP, EDGAR L.—Pharmacist with Doak & Orrison, Springport, Mich.
- KNOX, JAMES W. T.—In 1895-7 the holder of the Stearns Fellowship. In Analytical Research and Special Chemistry, Scientific Department, Frederick Stearns & Co., Detroit, Mich. Instructor in Practical Pharmacy, Detroit College of Medicine, Department of Pharmacy.
- MALLET, ELGIN.—Pharmacist with Nelson Mallett, Trenton, Mo.
- MARSH, FAY M.—Pharmacist with E. C. Haynes, Davison, Mich.
- MESSINGER, GARRY W.—Pharmacist for the Valley City Drug Co., 196 E. Bridge St., Grand Rapids, Mich.
- REESE, ERNEST G.—Pharmacist for Lincoln's Pharmacy, Bowling Green, Ohio.
- STEINCAMP, CHALLES H.—Pharmacist, 721 Utica St., Toledo, Ohio.
- TEETERS, WILBER J.—B.S., *Mount Union Coll.*, 1893. Demonstrator of Chemistry, Medical Department, State University of Iowa, Iowa City.
- WASHBURN, EDWARD E.—With Washburn & Skinner, Pharmacists, New London, Ohio.
- WASHBURN, JOHN L.—Sometime with E. E. Calkins, Ann Arbor, Mich. Pharmacist, Medina, N. Y.
- WATERS, HORACE H.—Sometime in the study of Medicine, University of Michigan. In pharmacy, Summit St., Toledo, O.

## 1896.

- AMES, JAMES W.—Pharmacist with S. E. Welch, Jr., Berea, Ky.
- BAUM, CLARENCE H.—B.S. (Phar.), 1898. In graduate studies for M.S. (Phar.)
- DERRY, JOHN W.—Baltimore, Md.
- DIEHL, OSCAR C.—Resident Graduate in 1896-7, employed in research by the Committee of Revision of the United States Pharmacopoeia. Chemist in Analytical Department of Parke, Davis & Co., Detroit, Mich.
- HEATH, GEORGE M.—Pharmacist, manager and member of the firm of Heath Brothers, Druggists and Mfg. of Cigars, Milan, Mich.
- HITCHCOCK, FRANK C.—Pharmacist with E. H. Haag, Ph.C., 1892, 601 Monroe St., Toledo, O.
- HORTON, CHARLES R.—Pharmacist with F. W. R. Perry, Ph.C., 1880, member Michigan State Board of Pharmacy, 709 Woodward Ave., Detroit, Mich.

- JOHNSON, CHARLES W.—Pharmacist with A. L. Walker, Ph.C., 1879, 415 Woodward Ave., Detroit, Mich.
- NISBET, ROBERT J.—Pharmacist with E. B. Macy, 9901 Ewing Ave., Chicago, Ill. Address at 10406 Erving Ave.
- OSTRANDER, EDWIN J. F.—Pharmacist for Grace Hospital, Detroit, Mich.
- SANDERS, ISIDORE.—Pharmacist with A. Wiley, Trinidad, Col.
- SCHMITT, EDWARD L.—Pharmacist with Joseph M. Schmitt, 312 North St., Rochester, N. Y.
- SMITH, HARRY T.—Chemist with the Lancaster Caramel Co., Lancaster, Pa.
- TABER, ROLAND B.—Pharmacist with Harry L. Bird, Benton Harbor, Mich.
- TAYLOR, HENRY W.—With D. W. Curry, wholesale and retail drug business, Rome, Ga.
- TROWBRIDGE, MILES L.—Resident Graduate in 1896-7.
- TROWBRIDGE, MILTON L.—Resident Graduate in 1896-7. Chemist with Buschemeyer Bros., Louisville, Ky.
- VON WALTHAUSEN, CHARLES A. F.—Bay City, Mich.
- WEAVER, CLARENCE A.—Pharmacist with F. W. Perry, Detroit, Mich., until 1898. Chemist in Biological Department of Parke, Davis & Co., Detroit, Mich.
- WILDER, GEORGE P.—Assistant in qualitative chemistry, 1895-6. Pharmacist with E. E. Calkins, Ph.C., 1884, Ann Arbor, Mich., until May, 1898. Pharmacist, State St., Ann Arbor, Mich.
- WILLIAMS, ELISHA B.—Assistant in manufacturing pharmacy with Parke, Davis & Co., Detroit, Mich.
- WILSON, FRANK H.—Pharmacist with C. B. Gatton, Virginia, Ill.
- WORDEN, EDWARD C.—Assistant chemist, for nitrogen demonstrations, New York State Agricultural Experimental Station, Geneva, N. Y., until 1898. Address Ypsilanti, Mich.

**1897.**

- AUSTIN, FREDERICK J.—Pharmacist with George J. Wiesinger, 598 Michigan Ave., Detroit, Mich.
- BACHELDER, EVA A. T.—Pharmacist with John Frisch, St. Charles, Minn.
- BACHMAN, JOHN S.—Pharmacist with S. Hemens, So. Lyons, Mich.
- BARINGER, FREDERICK J.—Analytical Pharmacist and Pharmacologist with W. S. Merrell Chemical Co., Cincinnati, O.
- BENJAMIN, EVI D.—Assistant in Pharmacy, University of Michigan.
- BOGGESE, NORMAN T.—Pharmacist with T. N. Boggesse, Huntington, W. Va.

- BROWN, JOHN H.—Pharmacist with Geo. W. Brown, Wilmington, O.  
COBB, JAMES W.—Pharmacist with E. E. Calkins, Ph.C., 1884, Ann Arbor, Mich.  
CRITCHETT, OTIS A.—Pharmacist with Eberbach Drug Co., Ann Arbor, Mich.  
FRANK, EDWARD C.—  
GOTT, EDWARD S.—Pharmacist in the firm of McKeehan & Gott, 807 Second St., Fort Madison, Ia.  
HALL, NELSON A.—Pharmacist with Randall & Conway, Sault Ste Marie, Mich.  
HOGREFE, LOUIS T. W.—In pharmacy and chemistry, 319 E. Mt. Vernon St., Springfield, Mo.  
LUTES, JOHN W.—In pharmacy, Belding, Mich.  
NICHOLS, CLARA E.—Beach City, O.  
NIVLING, WALTER A.—Pharmacist with H. S. Baker, 509 Fourth St., Sioux City, Ia.  
NOLL, WILLIAM H.—Pharmacist, Fort Wayne, Ind.  
RICH, S. AGNES.—Pharmacist with Loranger & Culver, Saginaw E. Side, Mich.  
RICHTER, SARA E.—MRS. ESTHER RICHTER SMITH.—Pharmacist with T. W. Wooton, 943 W. Madison St., Chicago, Ill. Address, 110 DeKalb St., Sta. D.  
STEVENS, ALICE M.—Evansville, Wis.  
STODDARD, HARRY S.—Pharmacist with C. B. Stoddard, 15 Trout St., E., Monroe, Mich.  
STURGIS, AMOS D.—Pharmacist with Page & Allger, Cor. Plainfield and Coit Aves., Grand Rapids, Mich.  
WAGNER, CHARLES L.—Sometime with William S. Merrill Chemical Co., Cincinnati, O. Brooklyn, O.

#### CHANGES.

- ATWOOD, DANIEL W.—1892. Pharmacist with French St. Pharmacy, N. E. cor. 10th and French Sts., Wilmington, Del.  
BARNHART, CLARENCE E.—1894. Pharmacist with Woolf's Pharmacy, 801 Lincoln Ave., Peoria, Ill.  
BAUMHARDT, ADAM J.—1887.—M.D., 1895. Physician, Lorain, O.  
BOWEN, THOMAS W.—1889. B.S., Northern Ind. Normal. Chemist of Elkhorn Mining Co., Boise City, Idaho.  
CADY, WALTER B.—1892. B.S. (Phar.), 1897. Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y., until 1895. Assistant in Agricultural Chemistry, University of the State of Missouri; Assistant Chemist, Agricultural Experiment Station, Columbia, Mo.



- \*CLARK, EDWARD W.—1886. Ph.G., New York College of Pharmacy, 1884. Pharmacist some time at 24 East Main St., Amsterdam, N. Y. Died at Ann Arbor, Mich., Jan. 4, 1896.
- CROMAN, JOSEPH M.—1887. M.D., Detroit College of Medicine, 1892. Physician, Mt. Clemens, Mich.
- CROWLEY, CHARLES F.—Professor of Chemistry, Creighton Medical College, 14th and Davenport Sts., Omaha, Neb.
- DAMON, WILLIAM E.—1884. Williamsville, Ill. Pharmacist with Manual Garcia & Co., Mexico City, Mexico, until 1897.
- \*DAVIS, CHARLES L.—1885. Chemist, Illinois Steel Co., South Chicago. Died March 2, 1898, in Nampa, Idaho, aged 43 years.
- DAVOLL, DAVID LAKE, Jr.—1893. B.S., 1897. In 1895-6, assistant chemist in the research laboratory of Parke, Davis & Co., Detroit. In 1896-7, instructor in Organic Chemistry, University of Michigan. Professor of Pharmaceutical Chemistry at Northwestern University School of Pharmacy.
- DURM, JOHN S.—1885. Some time in pharmacy. Fruit raising, Three Rivers, Mich.
- EWELL, ERWIN E.—1888. First Assistant Chemist, U. S. Agricultural Department at Washington, D. C.
- FLINT, MERRILL S.—1889. Formerly Pharmacist in charge of the drug department of the Chateaufort Ore and Iron Co., Lyon Mountain, N. Y. Salesman with H. C. Hulbert & Co., Wholesale Paper and Paper Mill Supplies, 53 Beekman St., New York City.
- FROMM, JOHN DAVID.—1893. In University of Pennsylvania.
- GEDDES, LILLIAN M.—1893. Pharmacist, 393 Cambridge St., Allston, Mass.
- FROST, HENRY J.—M.D., 1894. Physician, Rockford, Ill.
- GIBSON, WALTER McQ.—1883. Resident graduate of the University in 1884. Pharmacist, Portsmouth, Ohio. Address for 1896-7, Los Angeles, Cal.
- HAVENHILL, L. D.—1893. Phar. M., 1894. Assistant in Pharmacy and Pharmacognosy, University of Michigan, 1893-4. Analytical chemist with Dr. A. B. Lyons, Honolulu, H. I., 1895-6. Chemist for the Refining and Smelting Works, Aurora, Ill.
- HESSE, BERNHARD C.—1889. B.S. (Chem.), 1893, Ph.D., Chicago, 1896. Chemist for the New York House of Badische Anilin und Soda Fabrik. At present with the works at Ludwigshafen, Germany.
- HILL, CHARLES OTIS.—1893. A.B., University of Tennessee. Assistant Chemist, U. S. Food Investigation at University of Tennessee, Knoxville, Tenn. Address, 1008 Rose Ave.

- HIRTH, GEORGE J., Jr.—M.D., 1891. C.M., University of Berlin, '92. Physician, No. 66 Farned Ave., Milwaukee, Wis. Professor of Histology and Lecturer on Principles of Surgery and Assistant to Chair of Surgery of the Milwaukee Medical College and School of Dentistry.
- HOUGHTON, E. M.—1893, M.D., 1894. Pharmacologist and Bacteriologist in the laboratory of Parke, Davis & Co., Detroit, Mich.
- HUBER, CHARLES F.—1884. Pharmacist in the firm of Huber & Lohrstorfer, Port Huron, Mich.
- HUBBARD, J. L.—1891. Manager of the Pharmacy of J. W. Fleming, 700 Genessee Ave., Saginaw, E., Mich.
- JACKMAN, W. F.—1887. B.S. (Chem.), 1886. In charge of the School of Pharmacy in Maine State College, Orono, Me.
- KIRBY, THOMAS E.—1890. In the firm of Kirby Chemical Co., Grand Haven, Mich.
- KLINGMAN, THEOPHIL.—M.D., University of Michigan, 1892. Berlin, 1895. Assistant to the Professor of Nervous Diseases and Electrotherapeutics, University of Michigan.
- JACKSON, GEORGE R.—1892. A.B., Oberlin College. Pharmacist, 111½ Braler St., Memphis, Tenn. Professor of Chemistry in Collegiate Department of St. Augustine School, 1894-5.
- \*JOHNSON, CALVIN S.—1875. Pharmacist, Carthage, Ohio. Died April 1, 1896.
- LITTLE, JOHN R.—1876. Manufacturer of pharmaceutical specialties, Bloomington, Ill.
- LOHRSTORFER, JOSEPH.—1892. Pharmacist in the firm of Huber & Lohrstorfer, Port Huron, Mich.
- McGEE, THOMAS H.—1891. Pharmacist, Farmington, Mich.
- \*McNOAH, GRACE E.—1894. Graduate student, 1894-6. Died in Sierra Madra, Cal., December 14, 1896.
- MILLER, E. R.—1892. M.S., 1895. Adjunct Professor of Pharmacy, Alabama Polytechnic Institute, Auburn, Ala.
- \*MULL, ROBERT F.—1879. Banker, Philipsburg, Pa. Died Dec. 14, 1895, aged 40 years.
- MURDOCK, THOMAS E.—1894. Pharmacist in the firm of Murdock Bros., Northville, Mich.
- MURRAY, B. L.—1861. B.S. (Chem.), 1896. B.S. (Phar.), 1897. Chemist and Bacteriologist at the MERCK PHARMACY, Merck Building, University Place, New York City.
- NICHOLS, MARION F.—1894. Chemist for the Wallin Leather Co. Residence, 228 E. Bridge St., Grand Rapids, Mich.
- NORTH, S. J.—1885. New Terry, South Carolina.

- O'CONNOR, DELIA.—1894. Pharmacist with Geo. P. Wilder, Ph.C., 1896, Ann Arbor, Mich.
- PATTERSON, GEORGE H.—1892. Chemist, Economy Supply Co., 60 Wabash Ave., Chicago, Ill.
- \*OSTRANDER, REISDON J. H.—1883. Pharmacist, Monroe, Mich. Died Feb. 8, 1898.
- PECK, FRANK J.—1891. Food Inspector and City Chemist, No. 318 City Hall, Cleveland, Ohio.
- \*PEUTSCHER, CHRISTIAN.—1890. Pharmacist, cor. Griswold and State St., Detroit, Mich. Died Dec. 21, 1897. Buried at Lima, O.
- SHERER, WILLIAM.—1893. Pharmacist with the Payne Drug Co., Wholesale and Retail, 24-26 East Main St., Rochester, N. Y.
- SHEPHERD, FRANK I.—1891. A.B., Sanford University, Cal., 1895. Some time Assistant Chemist with the William S. Merrill Chemical Co., manufacturers, Cincinnati, Ohio. Chemist, Glycerine Department, Globe Soap Works Co., Cincinnati, O., and Fellow in Chemistry, University of Cincinnati. Professor of Chemistry, Univ. Denver, University Park, Colo.
- SMITH, MARIE R.—1888. M.D., Hahnemann Med. Coll., 1894. For some time in Hollands Pharmacy, cor. 55th and Madison Ave., Chicago. Physician and Surgeon, N. E. cor. Garfield Boulevard and Madison Ave., Hyde Park, Chicago, Ill. Professor of Anatomy and Histology, International Medical Mission College.
- SNOW, HERBERT W.—1884. Formerly analytical chemist for the manufacturing laboratory of Frederick Stearns & Co., Detroit, Mich. Member of the Convention of Revision of U. S. Pharmacopœia, 1890. In the firm of Snow, Lund & Co., wholesale and retail druggists, Omaha, Neb., until 1896. Chemist and manager of the U. S. Pharmacal Co., 32 Market St., Chicago, Ill.
- SELTZER, LEONARD A.—1892. Pharmacist with F. W. R. Perry, (Ph.C., 1880), 709 Woodward Ave., and Shurly Bl'd., Adams Ave., W., Detroit, Mich.
- THOMPSON, FRANK A.—1881. Proprietor and chemist, F. A. Thompson & Co., manufacturing chemists, Detroit, Mich.
- VAN ZWALUWENBURG, A.—1887. B.S. (Phar.), 1898. Assistant in Pharmacognosy and Pharmacy in the University of Michigan in 1887-8. Sometime chemist for the St. Louis Ore and Steel Co., South St. Louis, Mo. Chemist and manager of metallurgical works, San Luis Potosi, Mex., until May, 1897. Holder of the Stearns Fellowship of Research, University of Michigan.
- WAIT, CORA L.—1890. Sometime dispensing pharmacist at Northern Michigan Insane Asylum.—Mrs. Fred W. Culver, 1897. Traverse City, Mich.

WARE, EZRA P.—1888. B.S. (Phar.), 1897. In chemical work in the research laboratory of Parke, Davis & Co., Detroit, Mich.

WRAMPMEIER, THEODORE J.—1878. A.B., University of Michigan, 1878. Chemist for Inter. Rev., Consulting Chemist of California Powder Works; manufacturing chemist. 309 Sansome St., San Francisco, Cal.

## INDEX TO NAME OF GRADUATES, WITH YEAR OF GRADUATION.

Abbey, C. C. ....	'89	Barie, H. L. ....	'87
Adams, A. W. ....	'71	Baringer, F. J. ....	'97
Adams, A. W. ....	'91	Barnhart, C. E. ....	'94
Alcorn, G. S. ....	'86	Barnabee, H. S. ....	'83
Alder, S. W. ....	'83	Barry, B. T. ....	'89
Allen, C. P. ....	'88	Bassett, E. C. ....	'83
Allen, H. E. ....	'92	Baum, C. H. ....	'96
Al'en, J. A. ....	'81	Baum, C. M. ....	'75
Al'en, S. E. ....	'76	Baumhardt, A. J. ....	'87
Allison, C. W. ....	'88	Beach, L. F. ....	'76
Allmand, C. W. ....	'84	Beal, E. R. ....	'87
Allmendinger, C. G. ....	'82	Becker, C. L. ....	'81
Allshouse, H. A. ....	'89	Benton, Lou N. ....	'93
Allworth, J. E. ....	'89	Benjamin, E. D. ....	'97
Amerman, A. S. ....	'71	Berry, R. W. ....	'91
Ames, J. H. ....	'76	Bird, H. L. ....	'91
Ames, W. A. ....	'96	Birkmier, H. W. ....	'92
Ando, Shinichi ....	'91	Bliss, H. ....	'69
Armstrong, I. A. ....	'79	Block, L. H. ....	'89
Armstrong, R. B. ....	'90	Bloomfield, E. M. ....	'69
Armstrong, R. S. ....	'94	Blum, E. ....	'84
Arnold, C. F. ....	'69	Bodeman, F. E. ....	'73
Ashley, W. F. ....	'91	Boden, E. T. ....	'80
Atwood, D. W. ....	'92	Boehme, C. A. ....	'78
Austin, F. J. ....	'97	Boetcher, C. V. ....	'89
Avery, J. H. ....	'77	Boise, E. P. ....	'62
Ayers, J. N. ....	'79	Boggess, N. T. ....	'97
Babbitt, E. T. ....	'83	Boughton, F. G. ....	'76
Bachelor, Eva A. T. ....	'97	Bowdish, G. A. ....	'89
Bachman, J. S. ....	'97	Bowen, R. F. ....	'79
Baert, G. H. ....	'90	Bowen, T. W. ....	'89
Bailey, F. C. ....	'81	Bower, F. T. ....	'76
Baird, J. W. ....	'83	Bowerfind, H. J. ....	'95
Baker, C. ....	'87	Boyce, S. R. ....	'90
Baker, C. W. ....	'90	Boyd, J. P. ....	'73
Baker, F. W. ....	'90	Braddock, O. L. ....	'71
Banister, J. L. ....	'86	Briggs, Perry ....	'91
Bancroft, R. B. ....	'81	Brockmeier, J. H. ....	'82

Brooks, F. A. ....	'78	Cooper, W. H. ....	'84
Brown, J. H. ....	'97	Corbin, John W. ....	'91
Brown, J. G. ....	'73	Cotton, R. M. ....	'74
Buchanan, W. A. ....	'70	Coughlin, J. ....	'76
Buckham, A. J. ....	'86	Covert, S. ....	'69
Buckham, J. N. ....	'76	Craig, J. T. ....	'84
Bunn, Claude M. ....	'95	Crampton, C. A. ....	'82
Burgess, H. ....	'91	Crampton, C. B. ....	'71
Burke, W. H. ....	'84	Crane, K. (Mrs. Johnson) ....	'74
Burnett, C. J. ....	'72	Critchett, O. A. ....	'97
Burroughs, C. S. ....	'76	Croman, J. M. ....	'87
Burt, J. C. ....	'75	Crombie, S. M. ....	'82
Cady, W. B. ....	'92	Crowley, C. F. ....	'89
Calkins, E. E. ....	'84	Cunningham, H. ....	'82
Calkins, H. W. ....	'78	Cunningham, T. N. ....	'85
Campbell, A. ....	'91	Curtis, A. C. ....	'70
Campbell, W. G. ....	'79	Cushing, G. M. ....	'84
Carey, W. S. ....	'71	Cushman, H. DeP. ....	'69
Carley, G. L. ....	'82	Damon, B. W. ....	'83
Carr, L. B. ....	'87	Damon, W. E. ....	'84
Carssow, R. B. ....	'92	Daniels, G. B. ....	'86
Cary, J. C. W. ....	'70	Davis, Frank F. ....	'91
Case, E. T. ....	'84	Davis, C. L. ....	'85
Case, M. T. ....	'69	Davis, L. M. ....	'74
Case, T. G. ....	'70	Davoll, D. L., Jr. ....	'93
Chamberlain, F. J. ....	'89	Dawson, B. F. ....	'79
Chapel, Fred N. ....	'93	Dawson, G. V. ....	'84
Church, S. K. ....	'89	Dawson, J. H. ....	'83
Church, W. D. ....	'79	Dean, G. E. ....	'82
Churchill, P. ....	'91	De Jonge, Cornelius ....	'95
Churchill, O. L. ....	'76	Denison, J. J. ....	'82
Cirkler, C. H. ....	'81	Denny, J. D. ....	'83
Clark, E. W. ....	'86	Derry, J. W. ....	'96
Clark, F. M. ....	'85	Deyo, L. H. ....	'82
Clark, G. ....	'82	Dickinson, O. B. ....	'75
Clark, J. B. ....	'80	Diehl, O. C. ....	'96
Clark, J. T. ....	'76	Dietrick, C. W. ....	'76
Coad, N. G. O. ....	'75	Dilworth, M. (Mrs. Comly) ....	'82
Cobb, J. W. ....	'97	Dingley, C. A. ....	'76
Cody, Bert E. ....	'92	Dixon, G. F. ....	'77
Coffin, C. L. ....	'84	Dodd, C. W. ....	'82
Cole, W. W. ....	'79	Doehne, George, Jr. ....	'95
Coleman, Sheldon ....	'93	Doehne, W. H. ....	'87
Collins, C. F. ....	'72	Dothany, W. A. ....	'87
Collins, W. E. ....	'90	Doty, G. A. ....	'95
Condon, W. D. ....	'86	Doty, J. W. ....	'86
Conrad, J. F. ....	'84	Doty, W. P. ....	'86
Conrads, J. R. ....	'86	Douglas, S. T. ....	'74
Cook, A. D. ....	'92	Drake, C. F. ....	'95
Cook, G. S. ....	'73	Drake, Fred D. ....	'92
Cooke, F. A. ....	'83	Dryfoos, L. A. ....	'87

Duncan, C. G.	'74	George, E. L.	'69
Dunn, J. S.	'85	Gessler, M.	'82
Dunn, W. L.	'89	Gibson, E. D.	'78
Dupont, R. S.	'87	Gibson, W. M.	'83
Eastwood, J. F.	'74	Glazier, F. P.	'80
Eaton, H. K.	'86	Godfrey, C. P.	'84
Eaton, J. M.	'79	Goecker, L.	'82
Eaton, Mattie	'84	Goetter, F. B.	'83
Eberbach, W. F.	'88	Goodrich, L. A.	'82
Eddy, C. H.	'76	Gott, E. S.	'97
Egeroff, A. (Mrs. Fuller)	'78	Gower, A. C.	'70
Ehrhardt, H.	'74	Graham, A. B.	'93
Ellis, L. A.	'87	Graham, J. B.	'71
Emanuel, Julia E.	'89	Greaves, Edith E. (Mrs. White)	'91
Epley, A. W.	'94	Green, F. A.	'91
Ewell, E. E.	'88	Green, M. U.	'76
Ewell, H. P.	'85	Greene, A. L.	'82
Ewing, F.	'70	Gries, J. M.	'91
Faber, Fred	'93	Griffen, T.	'89
Farnum, L.	'94	Griffith, W. F.	'77
Fasquelle, L. J.	'82	Griggs, O.	'75
Fellows, C. A.	'80	Grimwood, C.	'76
Felt, G. H.	'86	Grochau, E. A.	'94
Field, E. C.	'83	Gunder, S. H.	'81
Finley, W. E.	'79	Gundrum, G.	'76
Fischer, Richard	'92	Guy, O. G.	'70
Fitch, H. A.	'71	Haag, E. H.	'92
Flanders, A. G.	'85	Hagle, P. N.	'70
Flick, O. C.	'71	Haigh, C. T.	'86
Flint M. S.	'89	Haigh, D. L.	'85
Foote, C. E.	'80	Hale, A. K.	'73
Ford, C. E.	'70	Hall, N. A.	'97
Ford, J. M.	'69	Hall, G. C.	'83
Fox, A. L.	'69	Hallock, A. A.	'77
Frank, E. C.	'97	Hance, S. S.	'87
Frank, H. O.	'83	Harrington, H. L.	'81
Franz, H. S.	'89	Harris, B. A.	'77
Frazee, F. H.	'84	Harvey, C. B.	'84
Fritts, F. F.	'74	Harvey, G.	'74
Fromm, J. D.	'93	Hasbrouck, W. A.	'78
Frost, H. J.	'89	Hatch, H. F.	'70
Fuller, L. C.	'76	Hauck, T.	'77
Gage, C. T.	'79	Hauenstein, W.	'83
Gardner, L. H.	'84	Havenhill, L. D.	'93
Gatchell, E. E.	'81	Hawes, G. S.	'90
Gates, W. H.	'77	Hawley, E. P.	'79
Gebauer, C. J.	'80	Hawks, R. E.	'88
Geddes, A. B.	'85	Heard, Mary K.	'92
Geddes, Lillian M.	'93	Hearne, Joseph C.	'91
Geisler, J. F.	'80	Heath, G. M.	'96
Gentsch, G. T.	'71	Heath, R. M.	'89

Heim, H. ....	'78	Jackson, C. E. ....	'93
Heim, W. ....	'82	Jackson, G. R. ....	'92
Heimbach, S. J. ....	'79	James, H. F. ....	'76
Heister, C. W. ....	'78	Janney, R. L. ....	'89
Hendershott, F. P. (Mrs. Hen- ning) ....	'87	Jarman, E. M. ....	'90
Henning, E. L. ....	'69	Jarvis, J. W. ....	'69
Henning, F. J. ....	'87	Jensen, P. C. ....	'79
Henry, G. C. ....	'74	Jenter, C. G. ....	'89
Herzer, H. A. ....	'95	Jewett, H. S. ....	'70
Hesse, B. C. ....	'89	Johnson, B. L. ....	'89
Higgins, G. E. ....	'70	Johnson, C. S. ....	'75
Higley, W. K. ....	'83	Johnson, C. W. ....	'96
Hill, C. O. ....	'93	Johnson, J. S. ....	'77
Hirth, G. J., Jr. ....	'89	Johnson, Marion E. ....	'77
Hirth, P. H. ....	'86	Johnson, O. C. ....	'71
Hitchcock, F. C. ....	'96	Johnston, J. J. ....	'77
Hitchcock, J. E. ....	'91	Jones, A. A. ....	'82
Hoehn, J. ....	'82	Jones, G. (Mrs. Cuscaden) ....	'74
Hoffman, A. G. ....	'84	Jones, J. H. ....	'94
Hoge, W. B. ....	'84	Jones, J. R. ....	'90
Hogrefe, L. T. W. ....	'97	Jones, M. A. ....	'87
Hollan, L. H. ....	'69	Josenhans, R. J. C. ....	'82
Hollis, C. W. ....	'90	Judson, F. E. ....	'80
Holloway, W. J. ....	'76	Judy, John N. ....	'95
Holthoeffer, H. J. ....	'83	Kahn, Harry ....	'91
Hood, C. H. ....	'69	Kebler, L. F. ....	'90
Hopper, A. G. ....	'84	Keith, F. R. ....	'89
Hopper, C. H. ....	'75	Kelly, J. P. ....	'79
Horine, D. P. ....	'88	Kelly, M. C. ....	'71
Horton, C. R. ....	'96	Kelly, Wm. A. ....	'92
Hosack, H. E. ....	'83	Kennedy, E. J. ....	'82
Houghton, P. S. ....	'79	Kennedy, E. M. ....	'91
Houghton, E. M. ....	'93	Kerley, A. P. ....	'77
Howell, C. C. ....	'70	Kidder, S., Jr. ....	'88
Hower, Phil. G. ....	'92	King, Joseph C. ....	'91
Hubbard, F. J. ....	'77	Kirby, M. S. ....	'90
Hubbard, J. L. ....	'91	Kirby, T. E. ....	'90
Hubbard, T. H. ....	'82	Kirchgessner, W. C. ....	'89
Huber, L. H. ....	'90	Kirchmaier, G. A. ....	'83
Hudson, C. H. ....	'84	Kirk, D. ....	'77
Hudson, H. H. ....	'94	Klein, J. M. ....	'92
Hueber, C. F. ....	'84	Klingmann, T. ....	'90
Huested, F. P. ....	'91	Knapp, E. L. ....	'95
Huhn, C. H. ....	'81	Knapp, L. B. ....	'81
Humiston, K. P. ....	'77	Knapp, V. ....	'77
Huntington, H. N. ....	'74	Knox, S. R. ....	'94
Huntsman, A. ....	'74	Knox, J. W. T. ....	'95
Ilhardt, W. ....	'90	Koehnle, O. H. ....	'78
Irwin, J. L. ....	'80	Koon, C. S. ....	'83
Jackman, W. F. ....	'87	Koons, C. W. ....	'79
		Kramer, L. G. ....	'89

Krause, B. S.	'87	McNoah, Grace E.	'94
Krug, W. H.	'89	Mead, A. H.	'94
Kuhlman, E.	'74	Mehlhop, F. W.	'89
Lake, C. N.	'84	Meinert, G.	'86
Landers, A. E.	'92	Melcher, A. B.	'85
Lauer, B. J.	'85	Melville, J. E.	'85
Leamon, G. P.	'84	Meredith, E. E.	'82
Ledman, O. S.	'83	Merkel, C. W.	'93
LeFevre, E. L.	'83	Merrell, A. F.	'71
Leisenring, W.	'87	Merrell, O. A.	'70
Leist, J. L.	'75	Merrett, F. D.	'80
Levy, H.	'88	Messenger, G. W.	'95
Levy, M. M.	'90	Meyer, T. F.	'78
Lewis, D.	'77	Meyer, O. P.	'90
Lilly, E. A.	'80	Miller, E. R.	'92
Little, J. R.	'76	Miller, T. W.	'86
Lobb, A. S.	'77	Miller, J. J.	'78
Lockwood, W. S.	'89	Milner, T. J.	'90
Logan, R.	'77	Miner, M. A.	'71
Lohman, G. H.	'70	Mills, C. W.	'70
Lohrstorfer, Joseph	'92	Mitchell, A. S.	'87
Long, W. L.	'77	Moody, L. W.	'78
Longstaff, C. H.	'82	Moore, S. S.	'71
Longwell, E. B.	'82	Moore, L. G.	'69
Lonstorf, G. J.	'80	Morgan, J. W.	'76
Loomis, J. H.	'81	Morris, G. A.	'93
Loudenbeck, H. C.	'91	Morris, J. E.	'82
Lovin, C. C.	'81	Morse, E. H.	'81
Lupinski, H.	'78	Moss, J. C.	'75
Lutes, J. W.	'97	Moss, J. R.	'70
Lynn, J.	'76	Muir, J. D.	'84
Maas, F. N.	'80	Mull, R. F.	'79
Mallett, Elgin	'95	Mummery, A. E.	'85
Maltbie, W. F.	'65	Murdock, T. E.	'94
Mann, A.	'80	Murray, B. L.	'91
Marsh, Fay N.	'95	Neal, J. C.	'69
Marshall, E. H.	'87	Newman, I. N.	'70
Marshall, E. S.	'80	Newton, W. B.	'93
Martzloff, C. E.	'90	Newton, W. F.	'70
Massey, F. W. H.	'76	Nichols, Clara Ella	'97
Massey, S. F.	'71	Nichols, M. F.	'94
Maxwell, J. C.	'94	Nickerson, F. H.	'93
McCarthy, R. H.	'73	Niermann, H. G.	'90
McCrilles, J. E.	'85	Nisbet, R. J.	'96
McCrea, H. F.	'81	Nivling, W. A.	'97
McCullough, R. S.	'80	Noll, W. H.	'97
McGee, T. H.	'91	Noll, M.	'81
McGregor, J. C.	'94	North, S. J.	'85
McGuire, B. J.	'90	Oaks, J. F.	'69
McKimmie, W.	'70	Obermann, R. F.	'83
McNeil, M. (Mrs. J. O. Reed)	'82	O'Connor, Delia	'94



Oechsler, A. ....	'88	Rice, S. ....	'73
Oles, F. R. ....	'82	Rich, S. Agnes .....	'97
Orth, L. P. ....	'79	Richter, Sara Esther .....	'97
Osborne, D. E. ....	'79	Riebe, C. ....	'84
Ostrander, E. J. F. ....	'96	Rieger, C. F. ....	'83
Ostrander, R. H. ....	'83	Risser, E. J. ....	'76
Palmer, G. H. M. ....	'82	Robertson, F. L. ....	'94
Palmer, W. ....	'90	Robinson, T. E. ....	'92
Palmer, H. ....	'85	Rockwell, M. ....	'89
Parker, A. S. ....	'79	Rockwell, O. M. ....	'82
Parker, C. E. ....	'85	Rodi, C. H. ....	'80
Parker, F. C. ....	'81	Roe, J. O. ....	'70
Parker, R. J. ....	'85	Rogers, A. S. ....	'85
Parkill, S. E. ....	'77	Romans, E. J. ....	'83
Parrott, B. E. ....	'81	Romig, S. V. ....	'70
Parsons, C. W. ....	'81	Rood, G. W. ....	'81
Parsons, H. B. ....	'76	Roos, C. L. ....	'83
Parsons, J. H. ....	'92	Rouse, W. H. ....	'69
Passolt, H. A. ....	'88	Rowland, C. W. ....	'89
Parkinson, F. E. ....	'89	Royer, T. ....	'82
Pattinson, G. H. ....	'92	Roys, H. M. ....	'76
Payne, C. E. ....	'80	Ruddiman, E. A. ....	'86
Pease, T. D. ....	'84	Rudolph, Karl E. ....	'93
Peck, F. J. ....	'91	Runyan, E. G. ....	'86
Pengra, C. P. ....	'83	Ruse, A. E. ....	'88
Pennington, J. E. ....	'88	Russell, D. M. ....	'91
Perry, F. W. R. ....	'80	Rutan, J. A. ....	'69
Pett, W. F. ....	'85	Sadler, A. ....	'69
Peyton, C. S. ....	'84	Salls, J. H. ....	'75
Phillips, D. A. ....	'71	Sanders, I. ....	'96
Pierce, Bessie G. ....	'93	Sandford, W. E. ....	'92
Pierron, J. J. ....	'76	Scherer, O. ....	'86
Post, M. E. ....	'77	Scherer, William. ....	'93
Powell, J. Z. ....	'71	Shettler, G. M. ....	'89
Prentice, F. F. ....	'72	Scheuerman, W. M. ....	'90
Pryer, C. E. (Mrs. Bartlett), .....	'82	Schlotterbeck, J. O. ....	'87
Pugh, F. B. ....	'74	Schmid, O. F. ....	'90
Purtscher, C. ....	'90	Schmid, T. ....	'81
Pusch, O. C. ....	'92	Schmidt, L. W. ....	'83
Quayle, W. T. ....	'81	Schmidt, S. ....	'81
Ranke, W. F., Jr., ....	'85	Schmidt, W. K. ....	'91
Ransom, R. B. ....	'82	Schmitt, E. L. ....	'96
Raynale, F. B. ....	'88	Schott, A. A. ....	'84
Reed, E. M. ....	'77	Schrage, W. ....	'74
Reese, E. G. ....	'95	Schumacher, A. C. ....	'84
Reeve, J. C. ....	'80	Seiffardt, L. E. ....	'78
Reppert, F. ....	'72	Seltzer, L. A. ....	'92
Reule, G. A. ....	'87	Senier, A. ....	'74
Rex, R. G. ....	'69	Sexton, W. A. ....	'81
Reyer, T. ....	'81	Seymour, James .....	'94
Rice, E. F. ....	'85	Shafer, C. M. ....	'83

---

Shanafelt, F. P. ....	'83	Styles, M. D. ....	'71
Shaper, J. H. ....	'88	Sutton, John B. ....	'92
Sheedy, J. T. ....	'92	Taber, R. B. ....	'96
Sheffield, W. C. ....	'76	Taylor H. W. ....	'96
Shepard, O. E. ....	'74	Taylor, W. ....	'70
Shepherd, F. I. ....	'91	Teeter, C. W. ....	'80
Sherrard, C. C. ....	'90	Teeters, W. J. ....	'95
Shubel, C. G. ....	'87	Tegarden, J. L. ....	'94
Shuler, D. P. ....	'87	Textor, O. ....	'81
Smith, A. W. ....	'85	Thayer, H. A. ....	'90
Smith, A. D. ....	'78	Thompson, C. W. ....	'81
Smith, C. ....	'84	Thompson, F. A. ....	'81
Smith, Carl E. ....	'93	Thompson, J. ....	'89
Smith, E. D. ....	'86	Thompson, M. S. ....	'86
Smith, Henry F. ....	'91	Thornburgh, T. R. ....	'82
Smith, H. T. ....	'96	Thum, F. ....	'80
Smith, J. H. ....	'77	Thum, H. ....	'78
Smith, Marie R. ....	'88	Tibbals, W. J. ....	'90
Smith, O. J. ....	'89	Todd, A. H. ....	'80
Smith, S. W. ....	'76	Thompkins, J. W. ....	'77
Snow, Henry P. ....	'91	Topping, C. O. ....	'94
Snow, H. W. ....	'84	Topping, G. B. ....	'87
Soetje, E. ....	'88	Townsend, P. L. ....	'78
Soetje, O. H. ....	'92	Travis, F. A. ....	'84
Soyer, G. P. ....	'83	Tremain, H. A. ....	'75
Spencer, E. ....	'78	Trowbridge, Miles L. ....	'96
Spencer, H. H. ....	'85	Trowbridge, Milton L. ....	'96
Spencer, J. J. ....	'83	Tupper, E. A. ....	'85
Spenger, L. J. ....	'89	Turner, D. D. ....	'81
Stabler, L. J. ....	'85	Turner, G. ....	'83
Staehle, W. C. ....	'75	Upjohn, A. (Mrs. Campbell) ..	'71
Standart, C. J. ....	'87	Upjohn, M. (Mrs. Sidman) ..	'71
Stanton, E. M. ....	'69	Van den Belt, N. ....	'82
Stecher, H. W. ....	'78	Vandivert, A. H. ....	'79
Stephenson, A. C. ....	'73	Van Etta, H. S. ....	'86
Steiner, S. G. ....	'85	Van Schoonhoven, G. G. ....	'91
Steincamp, C. H. ....	'95	Van Walthausen, C. A. F. ....	'96
Stevens, A. B. ....	'75	Van Zwaluwenburg, A. ....	'87
Stevens, Alice M. ....	'97	Varnum, E. C. ....	'83
Stevens, J. C. ....	'83	Vedder, F. F. ....	'86
Stevens, M. B. ....	'70	Vogel, A. F. ....	'89
Stevens, R. H. ....	'77	Waggoner, A. T. ....	'84
Stevenson, W. E. ....	'84	Wagner, Charles Linden ....	'97
Stevenson, G. C. ....	'94	Wagner, George ....	'93
Stewart, T. M. ....	'76	Wait, Cora L. (Mrs. Culver) ..	'90
Stinson, E. L. ....	'82	Walker, A. L. ....	'79
Stivers, E. S. ....	'86	Wallace, R. H. ....	'78
St. John, W. I. ....	'84	Ware, E. J. ....	'88
Stoddard, Harry Schellhaus ..	'97	Ward, R. M. ....	'81
Stone, C. G. ....	'77	Warner, George J. ....	'92
Sturgis, Amos Dorwin ....	'97	Warren, W. McK. ....	'87

Washburn, E. E. ....	'95	Williams, C. H. ....	'94
Washburn, John L. ....	'95	Williams, E. B. ....	'96
Waterman, C. N. ....	'88	Williams, S. W. ....	'81
Waters, H. H. ....	'95	Wilmarth, G. E. ....	'75
Watson, C. M. ....	'76	Wilson, F. H. ....	'96
Watson, J. B. ....	'80	Wilson F. L. ....	'79
Weaver, C. A. ....	'96	Wilson, G. E. ....	'78
Weaver J. ....	'74	Wilson, O. L. ....	'81
Weeks, E. J. ....	'70	Wilson, W. M. ....	'71
Wehrli, A. C. ....	'79	Wise, C. H. ....	'90
Weightman, M. ....	'89	Wise, P. E. ....	'94
Wells, Joseph J. ....	'92	Wiseman, F. D. ....	'88
Wells, W. H. ....	'75	Wolcott, W. A. ....	'70
Wertz, S. G. ....	'93	Wolf, F. C. ....	'80
Wesener, J. A. ....	'88	Wood, C. ....	'75
Westfall, D. M. ....	'90	Wood, H. R. ....	'90
Wetzel, R. M. ....	'84	Wood, J. B. ....	'89
Wheeler, A. M. ....	'81	Wood, L. N. ....	'79
Wheelock, W. C. ....	'89	Worden, C. E. ....	'78
Whinery, J. B. ....	'88	Worden, E. C. ....	'96
White, B. W. (Mrs. W. Hager) ....	'83	Wrampelmeier, T. J. ....	'78
White, W. H. ....	'82	Wurmb, T. H. ....	'81
Whitman, A. C. ....	'75	Wykoff, W. C. ....	'84
Whitney, J. W. ....	'91	Wyman, H. S. ....	'77
Whitlark, W. J. ....	'76	Young, A. V. E. ....	'75
Wickwire, F. ....	'82	Young, A. L. ....	'77
Wilbur, T. S. ....	'73	Young, R. D. ....	'90
Wilder, G. P. ....	'96	Zeig, A. C. ....	'89
Wiley, C. D. ....	'87	Zerse, O. G. ....	'82
Wilhite, E. L. ....	'84	Zwick, K. G. ....	'88

# CONTENTS.

	PAGE.
The Faculty .....	6
ANNOUNCEMENT FOR 1898-99 .....	8
Calendar .....	8
<i>Requirements for Admission:</i>	
To the College Course of Two Years .....	10
To the College Course of Four Years .....	11
Of Students not Candidates for a Degree .....	12
To Advanced Standing .....	12
Election and Registration of Studies .....	13
<i>Courses of Instruction:</i>	
In Pharmacy .....	15
In Pharmacognosy and Materia Medica .....	15
In General Chemistry .....	16
In Analytical Chemistry .....	17
In Organic Chemistry .....	18
In Physiological Chemistry .....	20
In Pharmacology .....	20
In Mineralogy .....	20
In Physics .....	21
In Research .....	21
Fellowships .....	22
Succession of Studies .....	22
In the Course of Two Years .....	22
In the Course of Four Years .....	23
In Selected Studies .....	24
EXAMINATIONS .....	24
REQUIREMENTS FOR GRADUATION:	
<i>With the Degree of Pharmaceutical Chemist</i> .....	25
<i>With the Degree of Bachelor of Science in Pharmacy</i> .....	26
THE LIBRARY, BOOKS OF REFERENCE AND TEXT-BOOKS .....	27
THE MUSEUM .....	28
FEES AND EXPENSES .....	28
STUDENTS IN 1897-98 .....	30
REGISTER OF THE ALUMNI OF THE SCHOOL OF PHARMACY, with present residence and occupation .....	33
INDEX TO NAMES OF GRADUATES, with year of graduation .....	42

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UNIVERSITY OF MICHIGAN,  
SCHOOL OF PHARMACY

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**Announcement for 1899-1900**

**Register of Alumni for 1895-1898**



UNIVERSITY OF MICHIGAN  
SCHOOL OF PHARMACY



Announcement for 1899-1900

Register of Alumni for 1895-1898

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ANN ARBOR, MICHIGAN  
PUBLISHED BY THE UNIVERSITY  
1899

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**Ann Arbor: Courier Office, Printers and Binders**

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## THE UNIVERSITY AND THE STATE.

THE University of Michigan is a part of the public educational system of the State. The governing body of the institution is a Board of Regents, elected by popular vote for terms of eight years, as provided in the Constitution of the State. In accordance with the law of the State, the University aims to complete and crown the work that is begun in the public schools, by furnishing ample facilities for liberal education in literature, science, and the arts, and for thorough professional study of engineering, medicine, pharmacy, law, and dentistry. Through the aid that has been received from the United States and from the State, it is enabled to offer its privileges with only moderate charges, to all persons of either sex, who are qualified for admission. While Michigan has endowed her University primarily for the higher education of her own sons and daughters, it must be understood that she also opens the doors of the institution to all students, wherever their homes. It is in this broad, generous, and hospitable spirit, that the University has been founded, and that it endeavors to do its work.

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### THE BOARD OF REGENTS.

JAMES B. ANGELL, LL.D., PRESIDENT.

		TERM EXPIRES.
HON. PETER N. COOK,	<i>Corunna,</i>	Dec. 31, 1899.
HON. HENRY S. DEAN,	<i>Ann Arbor,</i>	" 1899.
HON. HERMAN KIEFER,	<i>Detroit,</i>	" 1901.
HON. FRANK W. FLETCHER,	<i>Alpena,</i>	" 1901.
HON. ROGER W. BUTTERFIELD,	<i>Grand Rapids,</i>	" 1903.
HON. GEORGE A. FARR,	<i>Grand Haven,</i>	" 1903.
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JAMES H. WADE, SECRETARY AND STEWARD.

HARRISON SOULE, TREASURER.

HON. JASON E. HAMMOND,

SUPERINTENDENT OF PUBLIC INSTRUCTION.

## ORGANIZATION OF THE UNIVERSITY.

The University comprises the Department of Literature, Science, and the Arts, (including the Graduate School and the Summer School), the Department of Engineering, the Department of Medicine and Surgery, the Department of Law, the School of Pharmacy, the Homœopathic Medical College, and the College of Dental Surgery. Each department, school, and college, has its special Faculty. The University Senate is a body representing all the faculties, and considers questions of common interest and importance.

In the Department of Literature, Science, and the Arts, different lines of study lead to the degrees of Bachelor of Arts, Bachelor of Philosophy, Bachelor of Science, Bachelor of Letters, the corresponding Masters' degrees, and the degrees of Doctor of Philosophy and Doctor of Science.

In the professional schools degrees are given as follows: In the Department of Engineering, the Degrees of Bachelor of Science, Master of Science, Civil Engineer, Mechanical Engineer, and Electrical Engineer; in the Department of Medicine and Surgery, the degree of Doctor of Medicine; in the Department of Law, the degrees of Bachelor of Laws and Master of Laws; in the School of Pharmacy, the degrees of Pharmaceutical Chemist, Bachelor of Science, and Master of Science; in the Homœopathic Medical College, the degree of Doctor of Medicine; in the College of Dental Surgery, the degrees of Doctor of Dental Surgery and Doctor of Dental Science.

Students in any department of the University may enter the classes in any other department, upon obtaining permission from the faculties of the respective departments.

### **The School of Pharmacy.**

This Department of the University is organized to give professional training for all branches of pharmacy and for related chemical pursuits. Students registered in this School are responsible to the Faculty of Pharmacy. Its administration is in the chemical building.

### **The Chemical Laboratory.**

Students of all Departments of the University, responsible to its several Faculties, receive such instruction as they require upon chemical subjects in the laboratories and lectures of the different branches of chemistry, conducted together in the chemical building.

## FACULTY.

JAMES B. ANGELL, LL.D., PRESIDENT.

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ALBERT B. PRESCOTT, M.D., LL.D., DEAN.

ALVISO B. STEVENS, Ph.C., SECRETARY.

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### General Chemistry:

PAUL C. FREER, Ph.D., M.D.

DAVID M. LICHTY, M.S.

### Analytical Chemistry:

OTIS C. JOHNSON, A.M., Ph.C.

EDWARD D. CAMPBELL, B.S.

### Mineralogy:

WILLIAM H. PETTEE, A.M.

### Organic Chemistry:

ALBERT B. PRESCOTT, M.D., LL.D.

MOSES GOMBERG, Sc.D.

PERRY F. TROWBRIDGE, Ph.B.

### Botany, Pharmacognosy, Materia Medica:

VOLNEY M. SPALDING, A.B., Ph.D.

JULIUS O. SCHLOTTERBECK, Ph.C., Ph.D.

GEORGE B. WALLACE, M.D.

### Pharmacy and Prescriptions:

ALVISO B. STEVENS, Ph.C.

### Pharmacology, Physiology, Bacteriology:

THE FACULTY OF MEDICINE AND SURGERY.

### Mathematics, Physics, Languages:

THE FACULTY OF LITERATURE AND SCIENCE.

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ASSISTANTS TO THE FACULTY (1898-99).

**Pharmaceutical Preparations:** EVI D. BENJAMIN, Ph.C.

**Qualitative Analysis:** HERMAN E. BROWN, B.S.

**Quantitative Analysis:** CARL SUNDSTROM.

**General Chemistry:** CLIFTON H. BRIGGS, M.S.

**Organic Chemistry:** WILLIAM H. HESS, B.S.

## CALENDAR OF THE COLLEGE YEAR.

1899.

September 21-23. *Examination for Admission.*

September 23-25. *Registration of Students* having Admission upon Diploma.

September 26. FIRST SEMESTER BEGINS.

November —. Thanksgiving recess of three days.

December 21. (Evening). Holiday Vacation begins.

1900.

January 9. Exercises resumed.

February 9. (Evening). FIRST SEMESTER CLOSES.

February 12. SECOND SEMESTER BEGINS.

April 13. (Evening). Recess begins, ending April 23. (Evening).

June 21. COMMENCEMENT IN ALL THE DEPARTMENTS OF THE UNIVERSITY.

The school year extends from the Tuesday preceding the last Wednesday in September to the Thursday preceding the last Wednesday in June. Students of the first year are released the second Friday before Commencement. Admission may be obtained at the beginning of the second semester, February 12, 1900. For the full regular work admission cannot be granted at any other time than at the opening of the first or second semester, as students are instructed in classes in progressive order.

### References.

For the Conditions of Admission, see pages 7 to 11.

For Laboratory Studies and Lectures, pages 11 to 18.

The Order of Studies in the Two Years' Course, page 20.

The Order of Studies in the Four Years' Course, page 18.

Courses in Selected Studies, page 19.

Studies in Research, page 17.

Requirements for Graduation, page 20.

Fees and Expenses, page 23.

Register of Alumni, page 27.

Index of Graduates with year of graduation, page 37.

## EDUCATION FOR PHARMACY AND KINDRED PURSUITS.

The uses of science in these pursuits are such as to call for thorough preparation. Laboratory training and systematic study are important for the best results in the service. The inquiry for persons of full scientific competence is increasing, even now, while the commercial relations of pharmacy are embarrassed and discouraged. Those who have qualified themselves a good deal above the standard of the state examinations for registration in dispensing pharmacy are the ones most in demand. Opportunities in the analytical service of physicians, in the expert work of manufacturing houses, in filling numberless wants of sanitary duty or of industrial chemistry, are constantly being lost just because persons of the requisite qualifications cannot be found to take them. Furthermore the service of the prescriptionist is making more severe demands upon scientific preparation, as the materials of medicine are becoming more elaborate.

The avocations and positions which are open to those who have had special training for pharmacy in its several branches can be gathered with certainty from an examination of the alumni register published further on in this issue. The promptness with which positions are secured can be estimated from the records of the later graduating classes. The further results of the college training as found several years after graduation, may be gathered by an inspection of the list of the CHANGES of position and pursuit of the graduates at page 32.

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### REQUIREMENTS FOR ADMISSION.

[For admission to advanced standing, see page 9.

[For admission of students not candidates for a degree, see page 10.]

The requirements for admission vary in some particulars with the applicant's previous training in practical pharmacy, and with the course of study he intends to pursue. Two courses are offered: a two-year course, leading to the degree of Pharmaceutical Chemist; and a four-

year course, leading to the degree of Bachelor of Science in Pharmacy. The requirements are described below in two divisions, according to the degree which the student desires to take.

### **The Degree of Pharmaceutical Chemist.**

Applicants for admission to the two-year course, leading to the degree of Pharmaceutical Chemist, must be at least eighteen years of age.

It will be of advantage to the applicant to obtain at least a year of practical training in a drug store before entering the School. The required work leaves the student no time for an engagement in a drug store during the school year.

#### **ADMISSION WITHOUT EXAMINATION.**

**From High Schools.**—Applicants holding diplomas of graduation from any of the full courses of the schools approved by the Faculty of the Department of Literature, Science and the Arts, and included in the list on pages 54 to 59, of the University Calendar for 1898-99, are admitted without examination, as are, also, graduates of four year courses of other high schools of good standing.

**From Colleges.**—Students who have completed at least one year's work in an approved college of literature and science, and who bring explicit and official certificates describing their course of study and scholarship and testifying to their good character, are admitted without examination. Graduates of colleges of medicine or of pharmacy are also admitted without examination.

#### **ADMISSION ON EXAMINATION.**

Applicants who bring evidence of HAVING BEEN ENGAGED IN THE PRACTICE OF PHARMACY for at least two years are admitted on examination in the following branches:

**English.**—Exercises in the writing of English with correctness. Especial regard is paid to orthography, punctuation, the use of capitals, grammatical construction, and rhetorical fitness.

**Mathematics.**—*Arithmetic.*—Including Proportion, Involution and Evolution, and the Metric System. *Algebra.*—To include Equations of the First Degree containing two or more unknown quantities.

**Physics.**—Carhart and Chute's Physics or an equivalent.

**Chemistry.**—The high school preparation should include a year in chemistry, in which laboratory work is advised.

**Latin or German.**—To the extent of one year's study in an approved high school.

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## EXPLANATION.

*A student applying for admission to the School of Pharmacy of the University of Michigan should have this form filled out and signed by the principal or superintendent of the school which he has attended. This form should be sent to Prof. A. B. Prescott, or Prof. A. B. Stevens, Ann Arbor, Mich. It will be subjected to examination and the result will be endorsed on the form and the applicant will be informed of the conditions under which he will be admitted.*

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OTHER APPLICANTS ARE EXAMINED IN THE FOLLOWING BRANCHES:

**English.**—The same as given above.

**Mathematics.**—*Arithmetic and Algebra.*—The same as given above.  
*Geometry.*—The Elements of Plane Geometry.

**Latin or German.**—The Applicant may offer (1) three years of preparation in Latin; or (2) two years in Latin and one year in German; or (3) one year in Latin and two years in German.

**Physics.**—Carhart and Chute's Elements of Physics, or an equivalent.

**Chemistry.**—The same as given above.

**Botany.**—Laboratory work for half a year with occasional recitations and review exercises.

### **The Degree of Bachelor of Science in Pharmacy.**

The requirements for admission to the four-year course, leading to the degree of Bachelor of Science in Pharmacy, are and will be in every respect, whether on diploma or by examination, the same as the requirements for admission to the Department of Literature, Science, and the Arts, in the groups which fit students for pursuing the University studies required of candidates for the degree of Bachelor of Science. Of the four groups of requirements described on pages 44 to 49 of the University Calendar for 1898-99, Group III or Group IV gives suitable preparation for work leading to the degree of Bachelor of Science in Pharmacy; but persons who have completed the requirements of Group I or Group II will be admitted to the School on condition of making up the requirement in chemistry included in Group III. For the rules governing admission from diploma schools, and for a list of schools approved as qualified to prepare students for admission, see pages 53 to 59 of the Calendar. The rule relating to admission conditions, printed on page 122 of the Calendar, applies also to students admitted to the four-year course in the School of Pharmacy.

### **Admission to Advanced Standing.**

Students who have gained admission to the School may apply for credit in any of the college studies which they have pursued in another college, or in a high school whose graduates are admitted. Such application should be made to the Dean at the time of entering the School, and may be referred to the professor in charge of the studies in which credit is asked. In each case the professor will determine how much credit, if any, can be given. To this end he may appoint a time for examination of the applicant upon the study. Applicants are desired to bring explicit credentials as to the work done. Credits from other Schools of Pharmacy are adjusted separately for each study, as stated above. Owing to differences in the order and extent of the studies,

credits cannot be counted in years of pharmaceutical college study. Applicants by correspondence, before the opening of college, may have their credentials acted upon for advanced standing.

STUDENTS IN THE FOUR-YEAR COURSE, applying for advanced credit, will govern their applications according to the rules in force in the Department of Literature, Science, and the Arts (page 49 of the University Calendar for 1898-99), making their application first to the Dean of the School of Pharmacy.

Credits are received from the other departments, and from the Summer School, of this University.

### **Admission of Students Not Candidates For a Degree.**

Persons over nineteen years of age who bring evidence of having been engaged in the practice of pharmacy for at least two years, may be admitted to pursue selected studies upon passing the admission requirement in English described on page 8 of this Announcement. The same privilege is accorded to persons over twenty-one years of age who are able to study with advantage in the School, the same examination being required as to the correctness of English writing.

Students admitted under the above provisions are not regarded as candidates for any degree, and they do not become eligible for graduation until they have passed all the examination for admission to the course leading to the degree which they seek to obtain. To become eligible for graduation with the degree of Pharmaceutical Chemist, the student must at least pass the examination for admission required of those who have been engaged in the practice of pharmacy. To become eligible for graduation with the degree of Bachelor of Science, the student must meet the full entrance requirements of the course leading to that degree.

Students not candidates for a degree may select such studies as they are found prepared to pursue, under the regulations of the Faculty. Courses of selected studies are arranged for students, to suit their purposes and qualifications (see page 19). Selected studies may be continued so long as, in the judgment of the Faculty, they are carried with success and profit.

### **Time of Examination.**

**For Admittance to the Two-Year Course.**—An examination for admission will be held on Thursday and Friday, September 21 and 22, 1899, beginning at 9 A. M. on Thursday.

**For Admission to the Four-Year Course.**—The examination for admission will be held in connection with that of applicants for admission to the Department of Literature, Science, and the Arts (see the

schedule of the hours of these examinations in the University Calendar for 1898-99).

### **Election and Registration of Studies.**

At the beginning of each semester, and not later than the first Saturday, it is necessary that each student should determine upon his studies for that period, and register them in due form, filling out the "election blank," of the School of Pharmacy, furnished at the office of the Secretary of the School.

In the course of two years the studies are mainly though not wholly the same for all students, and the order of succession of subjects is that given on page 20. When the student has opportunity of choice he should at once consult the officers of the School upon his election of studies. A succession of studies for four years is given on page 21.

### **Studies Registered in Department of Literature.**

Every student taking work in mathematics, physics, or languages must fill out the "election blank" of the Department of Literature. This requires the signature of the Dean of the School of Pharmacy, and must be deposited as the blank directs.

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## **COURSES OF INSTRUCTION.**

The courses of instruction comprise lectures, recitations, and laboratory work. The amount of work in each course is expressed in hours, an "*hour*" signifying one exercise a week during one semester. A lecture or recitation is usually one hour in length. A laboratory exercise employs three hours, more or less, being continued until the work assigned to one exercise, or a due portion of the work assigned to the course, has been completed. The satisfactory completion of one exercise a week during one semester, including a sufficient standing in the examination held at the end of the semester, entitles the student to one *hour of credit* towards graduation. It is expected that a lecture or a recitation, with the personal study necessary to maintain the student's standing in the subject, will take in all as much time as a laboratory exercise. Therefore an *hour of credit* is regarded as having the same value whether obtained in a course of lectures or in a course of laboratory exercises.

[In the statements of courses following, the numbers in brackets are the Course numbers in the same subject in the Department of Literature and Science.]

### Pharmacy.

**COURSE A.—*Theory and Practice of Pharmacy.*—Five hours a week, Second Semester. Lectures and Recitations. Professor STEVENS.**

History of pharmacopœias and recitations from the U. S. Pharmacopœia. Specific gravity, weights and measures. Problems in parts by weight from chemical proportions, weights, volumes and percentages of strength. Application of heat for pharmaceutical uses. Solution, filtration, decantation, clarification, pulverization, granulation, crystallization, sublimation, percolation, distillation, dialysis, etc.

**COURSE B.—*Operative Pharmacy and Pharmaceutical Preparations.*—Laboratory work daily and recitations three times a week, making *eight* hours of credit. First Semester. To be preceded by Course A in Analytical Chemistry, completed clear of conditions. Professor STEVENS.**

The satisfactory production of about one hundred and fifty preparations, embracing the classes of the U. S. Pharmacopœia and National Formulary, galenicals, scales, synthetic chemicals, etc. Critical application of the pharmacopœial tests. The daily laboratory exercise takes about four hours.

**COURSE C.—*Pharmaceutical Technology and Prescription Practice.*—Four hours of credit. Second Semester. Lectures and work at the Prescription Stand, the time taken in the prescription exercises being dependent upon the previous experience and the ability of the student. Professor STEVENS.**

The technology of articles used in pharmacy. Commercial history, prevalent impurities, standards of purity and strength, official tests, technical and public uses.

The Art of Dispensing. Doses, medicinal and poisonous. *Fac simile* of prescriptions will be thrown upon the screen by the aid of a stereopticon, giving practice in the chirography of physicians, and criticism of quantities, doses, errors, incompatibilities, and methods of compounding.

### Pharmacognosy.

**MICRO-BOTANY, PHARMACOGNOSY, PHARMACOLOGY, THERAPEUTICS.**

**COURSE A.—*Micro-botany.*—Two hours of credit. First Semester. Work in the botanical laboratory twice a week, two hours each time. Professor SCHLOTTERBECK.**

Structural botany and the delineation of cell-structure, and cell contents, tissues and tissue systems. Wherever possible material for demonstration is selected from plants or parts of plants which find medicinal application. Minute histological study of important crude drugs, their substitutes and adulterants. Practical work in the microscopical examination of powder-drugs, foods and condiments, and the

detection of adulterations. Reports upon commercial samples of the same obtained in open market and upon specially prepared unknown mixtures.

COURSE B.—*Micro-botany*.—*Three hours* of credit. Second Semester. Work in the botanical laboratory twice a week, two hours each time, and a lecture once a week. Continuation of Course A. Professor SCHLOTTERBECK.

This course is concluded by original investigation upon important crude drugs. A set of representative permanent mounts is prepared by each student.

COURSE C.—*Pharmacognosy*.—*Three hours* of credit. First Semester. Professor SCHLOTTERBECK.

Lectures, demonstrations and recitations upon the botanical and geographical source, history, methods of cultivation, collection and preparation, and the active constituents of all important medicinal plants. Practical exercises in the ready recognition of the various articles discussed in the lectures. Opportunities in the Botanical Gardens.

COURSE D.—*Materia Medica*.—*Two hours* a week. First Semester. May be taken in the same semester as Course C. Lectures and Recitations. Dr. WALLACE.

Pharmacology, Therapeutics, Posology, and Toxicology. The classification and history of medicines. Their physiological action, therapeutic applications, their preparations and doses. The symptoms of poisoning and the use of antidotes.

COURSE E.—*Pharmacognosy*.—*Two hours* a week. Second Semester. Continuation of Course C. Professor SCHLOTTERBECK.

COURSE F.—*Materia Medica*. *Two hours* a week. Second Semester. May accompany Course E. Continuation of Course D. Dr. WALLACE.

### General Chemistry.

COURSE A. [Course 1].—*Elementary Inorganic Chemistry*, Descriptive and Experimental. *Three hours* of credit. (Advanced credit from high schools upon examination.) Second Semester. Professor FREER.

COURSE A. [Course 2].—Laboratory work in General Inorganic Chemistry. *Credit arranged with instructor*. Mr. HIGLEY and Mr. LICHTY. This course must be preceded or accompanied by Course A or its equivalent.

COURSE B. [Course 5].—*Inorganic Chemistry, Descriptive and Experimental*, Continuation of Course A. *Five hours* of credit. First Semester. Lectures and recitations. Mr. HIGLEY.

COURSE AA.—*Inorganic Chemistry, Descriptive and Experimental*.—*Five hours* of credit, lectures and quizzes five times a week. First Semester. Professor FREER.

A beginning course extending further than Course A.

### Analytical Chemistry.

#### QUALITATIVE ANALYSIS, QUANTITATIVE ANALYSIS, TECHNICAL ANALYSIS.

**COURSE A.** [Course 1.]-*Qualitative Analysis*.—Laboratory work and recitations, each five times a week, giving *ten hours* of credit. Either First or Second Semester. May be divided between the two semesters, as a five-hour course in each [Courses 3 and 3a]. To be preceded or accompanied by a course in general chemistry, or by the study of chemistry with laboratory method in the high school. Professor JOHNSON.

The study of chemical change, in the reactions of metallic salts and other inorganic substances and as represented by equations. The comparison of solubilities, and the available means of separation. Methods of analysis and their relation to methods of synthesis. Reactions of oxidation and reduction. Analysis of mixtures.

**COURSE B.** [Course 4.]-*Quantitative Analysis*.—Laboratory work five times a week, and lecture-recitations twice a week, giving *seven hours* of credit. Either First or Second Semester. Must be preceded by Course A, completed clear of conditions. Professor CAMPBELL.

The determination of specific gravities; volumetric estimations; gravimetric determinations and separations. The results to come within specified limits of recovery. The laboratory exercises take from three to four hours each.

**COURSE C.** [Course 2.]-*Advanced Quantitative Analysis*.—Laboratory work three times a week, and recitations twice a week, giving *five hours* of credit. Second Semester. May follow Course A, of which it is a continuation. Professor JOHNSON.

**COURSE D.** [Course 5.]-*Advanced Qualitative Analysis*.—Laboratory work five times a week, a *five-hour* course. Either First or Second Semester. Must be preceded by Course B, and requires special permission. Professor CAMPBELL.

**COURSE E.** [Course 6.]-*Iron and Steel Analysis*.—Laboratory work, a *five-hour* course. Either First or Second Semester. Open to those who have completed Course B and received special permission. Professor CAMPBELL.

**COURSE F.** [Course 8.]-*Analysis of Minerals*.—Qualitative and quantitative laboratory work for *five hours* of credit. Either First or Second Semester. Must be preceded by Courses A and B and requires special permission. Professor CAMPBELL.

**COURSE G.**-*Water Analysis*.—Laboratory work three times a week and reading, a course of *three hours* of credit. Mineral water analysis, and the chemical methods of sanitary water analysis. Either First or

Second Semester. Must be preceded by Course B, and requires special permission. Professor PRESCOTT and Dr. GOMBERG.

SHORTER COURSES IN QUALITATIVE CHEMISTRY FOR STUDENTS NOT CANDIDATES FOR A DEGREE.

COURSE H.—*Three Months' Course.*—*Qualitative Chemistry.*—Laboratory work and recitations, each five times a week. Each laboratory exercise takes three or four hours, the recitation one hour, both in the time from 1 to 5 P. M. *Begins September 26, January 9, April 2.*

The notation of salts; solubilities as concerned in the inorganic reactions studied group by group; chemical equations in precipitation, solution, and gas generation; studies of chemical change resulting in "*incompatibilities.*" A limited number of "unknowns" in actual analysis, not earlier than the last month of the course. The purpose of the course is an acquaintance with chemical change, rather than qualifications as an analyst, the course being too brief for the latter.

COURSE I. [Course 3.]—*First Steps in Qualitative Analysis.*—Laboratory work three times a week, recitations twice a week. First or Second Semester. Professor JOHNSON. This course constitutes about one-half of Course A in Analytical Chemistry. It gives a little more analytical work than the three months' course.

**Organic Chemistry.**

INCLUDING ANALYTICAL AND APPLIED ORGANIC CHEMISTRY.

COURSE A. [Course 10.]—*Carbon Compounds.*—*Five hours* of credit. First Semester.—To be preceded by a course in General Chemistry, and one in Analytical Chemistry. Lectures. Professor PRESCOTT.

With an introduction to the reference literature of organic chemistry. With each lecture there is a short colloquium, and a brief essay drawn from reference literature written and read by a member of the class.

COURSE B. [Course 11.]—*Organic Preparations.* *Three to five hours* of credit. Either First or Second Semester. May accompany or follow Course A. Laboratory work in organic synthesis. Dr. GOMBERG.

COURSE D. [Course 14.]—*Organic Analysis, and Drug Assaying.*—*Seven hours* of credit. Second Semester. To be preceded by Course A and by a course in quantitative analysis (Course B of Analytical Chemistry). Laboratory work with Lectures. Dr. GOMBERG and Mr. TROWBRIDGE.

Qualitative and quantitative analysis for alkaloids, and certain other representative carbon compounds, drug assaying, the outlines of fat analysis. With sub-courses in technical organic analysis, adapted to the purposes of the student.

**COURSE DD.—*Sanitary and Commercial Organic Analysis.***—*Five hours* of credit. First or Second Semester. Continuation of Course D. Laboratory work and reading. May be devoted to Food Analysis or to some branch of commercial analysis, such as that of Nostrums on the Market, or that of Paint Materials. Professor PRESCOTT and Dr. GOMBERG.

**COURSE E.—*Toxicology.***—Inorganic and Organic. Chemical and microscopical. *Three hours* of credit. Either First or Second Semester. Must be preceded by Course D and the pre-requisites of that course. Laboratory work and reading. Professor PRESCOTT and Dr. GOMBERG.

#### BEGINNING COURSES IN ORGANIC CHEMISTRY IN SECOND SEMESTER.

Obtained only by permission. Given primarily for classes in other Departments of the University. Candidates for a degree begin the subject with Course A and do not require these courses.

**COURSE F<sup>1</sup>.—*Lectures in Organic Chemistry*** three times a week.—*Two hours* of credit. Mr. TROWBRIDGE.

**COURSE F<sup>2</sup>. [Course 28.]—*Lectures on Organic Chemistry*** five times a week.—*Four hours* of credit. Professor PRESCOTT.

#### Physiological Analysis and Bacteriology.

**COURSE A.—*Physiological Analysis.***—A course of *five hours* of credit obtained in *three months*. Begins September 26, January 9, April 2. Must be preceded by a course in qualitative analysis, and one in organic chemistry. Laboratory work five times a week, and lectures three times a week,—all between 1 and 5 P. M. Professor NOVY.

The chemistry of normal and abnormal urine; the chemistry of the digestive liquids of the stomach, etc., etc.

**COURSE B. [Course 7.]—**The subject of Course A extended. Should be preceded by quantitative analysis. Professor NOVY.

**COURSE C. [Course 3.]—*Bacteriology.***—*Five hours* of credit. Laboratory work daily for *three months*. Lectures are also given. [Course 2]. A more advanced course, also, can be obtained. The course begins September 26, January 9, April 2. Professor NOVY.

#### Pharmacology.

**COURSE A.—*Pharmacological Laboratory.***—*Three hours* of credit, Obtained only by permission. Laboratory work and reading. To be preceded by Course A and Course D in organic chemistry. It is necessary to have had study of physiology. Professor CUSHNY.

**COURSE B.—*Physiology.***—*Five hours* of credit. First Semester. Obtained by permission. Lectures and recitations. Must be preceded



by a course in organic chemistry. It is also desirable that the student have had studies in anatomy. Professor LOMBARD.

### Mineralogy.

COURSE A.—*Crystallography*.—Twelve lectures supplemented by practical exercises. In Second Semester, beginning on a date to be announced. Professor PETTEE.

COURSE B. [Course 1.]—*Mineralogy*.—Two hours of credit. Includes Course A. Either First or Second Semester. To be preceded by a course in general chemistry. Lectures and practice.

COURSE C. [Course 2.]—*Mineralogy*.—Five hours of credit. Includes Course B as well as Course A. Second Semester. To be preceded by a course in general chemistry and a course in analytical chemistry. Lectures and practice. Professor PETTEE.

### Physics.

COURSE A. [Course 1.]—*Five hours*.—Second Semester. Open to those who have had the B.S. entrance examination in physics, and to all others who have had sufficient preparation. A knowledge of plane trigonometry is indispensable. Mechanics, Sound and Light. Lectures. Professor REED.

COURSE B. [Course 2.]—*Five hours*.—First Semester. Must be preceded by Course A in physics and by a course in general or analytical chemistry. Electricity, Magnetism, and Heat. Lectures. Professor TROWBRIDGE.

### Research.

The work of a student who undertakes research is in charge of one or more of the professors, subject to the provisions of the Faculty. Under this direction any student suitably prepared by previous training, may enter upon an investigation. Facilities of laboratory and library for a special research may be granted to any competent person, registering as a student, whether the results are to be published or not. Holders of a Fellowship devote their time to experimental research with publication of the results. The opportunity of undergraduates in the research laboratories is usually confined to the last year of the four-years' course and the last semester of the two-years' course. Research is entitled to credit toward a degree in proportion to its extent and value.

### Fellowships and Grants for Research.

THE STEARNS' FELLOWSHIP has been maintained since 1895 by means of gifts made by Messrs. Frederick Stearns & Company of Detroit.

Appointments to the fellowships are made by the Faculty from graduate workers on the ground of the best qualifications for research.

THE COMMITTEE OF REVISION AND PUBLICATION OF THE PHARMACOPŒIA OF THE UNITED STATES has made grants for the support of special investigation, under the direction of the Committee in prosecution of the Revision. Persons selected for this important service are registered as graduate students and devote themselves entirely to the work of the research undertaken.

## SUCCESION OF STUDIES.

### I. IN THE COURSE OF TWO YEARS.

The regular sequence of studies for the degree of Pharmaceutical Chemist, to be completed in four semesters, is given on page 2c, under the head of Requirements for Graduation. The work can be entered upon at the beginning of the second semester, but in this case it is the more desirable to take five semesters for completion. A curriculum of studies for *five semesters*, or for *six semesters*, will be arranged by the Faculty to suit the individual purposes or needs of students.

### II. IN THE COURSE OF FOUR YEARS.

Students who enter the School prepared in Latin, in German, and in chemistry, as high school studies, are advised to arrange their work in accordance with the scheme printed below. Students who enter with French instead of German, or without chemistry, are advised to follow the same scheme in general, with such modifications as may be necessary.

*First Year, First Semester*.—Mathematics [1a], three hours; French, four hours; German, two hours; Pharmacognosy A, two hours; General Chemistry [2], three hours; English [1], two hours.

*First Year, Second Semester*.—Mathematics [2a], four hours; Physics [1], five hours; Pharmacognosy B, three hours; German, two hours.

*Second Year, First Semester*.—Analytical Chemistry A, ten hours; Pharmacognosy C, two hours; French, two hours; Mineralogy B, two hours.

*Second Year, Second Semester*.—Analytical Chemistry B, seven hours; Pharmacy A, three hours; Pharmacognosy E, two hours; General Chemistry, B, five hours.

*Third Year, First Semester*.—Pharmacy B, ten hours; Organic Chemistry A, and a part of B, six hours.

*Third Year, Second Semester*.—Organic Chemistry D, five hours; Pharmacy C, four hours; Elective studies, not to exceed seven hours,

taken from the following: Physiological Chemistry, A, five hours, or C, five hours; Organic Chemistry B, two hours, or C; five hours; French or German; Physics [2], five hours.

*Fourth Year, First Semester*.—Pharmacognosy D, three hours; Pharmacology A, three hours, and B, five hours. Elective studies, and studies in research.

*Fourth Year, Second Semester*.—Pharmacognosy E and F, five hours; Analytical Chemistry G, three hours; Research.

### III. IN SELECTED STUDIES.

Students not expecting to graduate can enter for selected studies at the beginning of the First Semester, September 26, and at the beginning of the Second Semester, February 12. For pharmaceutical purposes, the student who is limited to one year's college work, can do well in taking the regular studies of the First Year in the Course of Two Years as stated on page 20.

Of the shorter courses usually most available for students having limited time in college, the following may be named:

- Course A in Pharmacognosy. First Semester (page 12).
- Course C in Pharmacognosy. First Semester (page 13).
- Course A in General Chemistry. Second Semester (page 13).
- Course AA in General Chemistry. First Semester (page 13).
- Course H in Qualitative Chemistry. Oct., Jan., April (page 15).
- Course [28] in Organic Chemistry. Second Semester (page 16).
- First Steps in Qualitative Analysis. Either Semester (page 15).

All the work of the School is open to students not candidates for a degree, so far as they are prepared to engage in it.

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### EXAMINATIONS.

The examination upon each Course of instruction is held at the time the work of that Course is completed. The examinations, therefore, are held at the end of each semester, in February and in June.

The result of an examination is reported by the Professor in charge, for each student enrolled, to the Faculty, in terms as follows:

*Passed*.—Entitling the student to full credit for the course.

*Conditioned*.—Imposing some specified condition, usually to take another examination, the condition to be fulfilled before credit can be given.

*Provisionally Passed.*—Withholding the credit from the course until the student shall have done better work in other studies, in the judgment of the Faculty as a whole, who can change the record of Provisionally Passed to a record of Passed, or Conditioned, or Not Passed, whenever such change shall be justified by the scholarship of the student in his several studies.

*Not Passed.*—Requiring the student to go over the regular exercises of the study again before he receives another examination.

*Absent.*—With statement of the cause of absence; if the student have left the class, stating at what time; or stating if absent without excuse or explanation.

### REQUIREMENTS FOR GRADUATION.

[Experience in the business of pharmacy is not made a requirement for a degree.]

#### I. *With the Degree of Pharmaceutical Chemist.*

[For requirements of college entrance, see page 8.]

##### FIRST YEAR, FIRST SEMESTER

	Hours of Credit.*	Hours in Lect. & Rec.	Hours in Laboratory.
General Chemistry, Course AA, . . . . .	5	90	
Pharmacognosy, Course A, . . . . .	2	36	
Analytical Chem., Course A, <i>Qual.</i> , . . . . .	10	90	360
Total for First Semester, . . . . .	17	216	360

##### FIRST YEAR, SECOND SEMESTER.

Pharmacy, Course A, . . . . .	5	90	
Pharmacog. Course B, <i>Micro-botany</i> , . . . . .	3	18	72
Analytical Chem., Course B, <i>Quantitative</i> , . . . . .	7	36	360
Mineralogy, Course A, <i>Crystallography</i> , . . . . .	1	6	12
Total for Second Semester, . . . . .	16	150	444

##### SECOND YEAR, FIRST SEMESTER.

Pharmacy, Course B, <i>Preparations</i> , . . . . .	8	72	288
Organic Chemistry, Course A, . . . . .	5	90	
Pharmacognosy Course C, . . . . .	2	36	
Pharmacog., Course D, <i>Materia Medica</i> , . . . . .	2	36	
Total for First Semester, . . . . .	17	234	288

\*"Hours of Credit" are the number of exercises *per week* for one semester. See page 11.

## SECOND YEAR, SECOND SEMESTER.

Pharmacog., Course F, <i>Materia Medica</i> , . . .	2	36	
Organic Chem., Course D, <i>Analysis</i> , . . .	8	144	288
Pharmacognosy, Course E, . . . . .	2	36	
Pharmacy, Course C, <i>with Prescrip. Practice</i> , . . .	4	72	
Investigations, or elective studies, . . . .	2		72
Total for Second Semester, . . . . .	18	288	360
Totals of required work, . . . . .	68	888	1,452
Hours in laboratories and lectures, . . .		2,340	

2. *With the Degree of Bachelor of Science in Pharmacy.*

[For requirements of college entrance, see page 9.]

[For the advisory sequence of studies, see page 18.]

In English: Courses [1], [1a].

In German: (a) for those who entered *without* German, Courses [1], [2]; or (b) for those who entered *with* German, four hours.In French: (a) for those who entered *without* French, Courses [1], [2], or an equivalent; or (b) for those who entered *with* French, four hours.

In Mathematics: Courses [1a], [2a].

In Physics: Course A [1].

In General Chemistry: (a) for those who entered *without* chemistry, Courses A, B; or (b) for those who entered *with* chemistry, Course B.

In Analytical Chemistry: Courses A, B.

In Organic Chemistry: Courses A, D.

In Mineralogy: Course B.

In Pharmacognosy: Courses A, B, C, D, E, F.

In Pharmacy: Courses A, B, C.

From the other courses offered in the School, or in other departments of the University, the student must choose with the approval of the Faculty and complete enough including those above prescribed to make in all *one hundred and twenty* hours of credit.

3. *With the Degree of Master of Science.*

Graduates with the degree of Bachelor of Science, accepted as candidates for a higher degree, after at least a year of graduate study in three subjects, a major subject and two minors, may receive examinations for the degree of Master of Science, which is conferred in the School of Pharmacy.

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**LIBRARY, BOOKS OF REFERENCE, AND TEXT-BOOKS.**

The School provides an extensive library, the main portion of which is shelved and indexed in the General Library Building of the University. The entrance to the library is within one hundred feet of the entrance to the main building of the School of Pharmacy. The Library is open to readers twelve and one-half hours daily, except Sundays and legal holidays, during the collegiate year, and six hours daily during the three months of the summer vacation.

The Library provides the complete sets of the journals, the original repositories of the sciences related to pharmacy, in all languages, as well as the current periodicals of the profession, encyclopædias and hand-books of chemistry and pharmacy, and the latest works of value in study. The works of reference in actual use in the School may be estimated at over four thousand volumes. The medical library in the same building, numbers 7,762 volumes, besides unbound pamphlets. In all the general library contains 98,222 volumes and 16,952 unbound pamphlets.

A working library is also provided in a reading room of the Chemical Building, with over one thousand works of immediate reference, duplicates of those in the General Library. These works are in constant use by students for reference reading upon their laboratory work and in preparing for their recitations. The files of current numbers of the journals of chemistry and pharmacy are also provided in the reading room.

THE CLASS TEXT-BOOKS of the School, those which the student should obtain for himself, can be obtained in the book-stores in this University town at rates lower than those customary in the general trade of the large cities. These text-books include the following: In General Chemistry, Freer. In Qualitative Analysis, Prescott and Johnson. In Quantitative, Cheever and Smith's Select Methods. In Pharmacy, the U. S. Pharmacopœia. In Botany, Bastin. In Pharmacognosy, Flückiger, Maisch. In Organic Chemistry, Bernthsen. In Organic Analysis, Prescott.

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**THE MUSEUM.**

This comprises collections in educational chemistry, the chemical industries, pharmacy, and pharmacognosy. It occupies a floor space of 2,500 square feet in the chemical building, and is provided with perma-

nent cases. The chemical industries are represented by collections of the materials and the successive products of manufacture, and the resources and methods of industrial art.

IN PHARMACOGNOSY, the collection of medicinal plants is extensive and well chosen for instruction both in botany and in commercial history. This collection is being rapidly enriched from all parts of the world. It is used in connection with the series of working supplies in daily use in the classes. The crude drugs are displayed in comparison with their active constituents, each in its proportional quantity. Pharmacy is exemplified in the preparations of the pharmacopœia, the national formulary, and the appliances for skillful manipulation. Of all these collections a good share originates in the work of students engaged in special lines of study and research.

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### **FEES AND EXPENSES.**

THE MATRICULATION FEE is \$10 for residents of Michigan, and \$25 for others. It is paid but once and gives privileges of permanent membership in any department of the University.

THE ANNUAL FEE is \$35 for residents of Michigan, and \$45 for others. It is paid the first year, and each year thereafter.

In the Chemical Laboratory the student pays by account for the chemicals and apparatus which he uses. The expense varies with prudence and economy, the average amount being about one dollar and twenty cents per week. Advanced payment is required from time to time; the first deposit being twenty dollars.

At graduation there is a diploma fee of \$10.

Students obtain board and lodging in private families for from three to five dollars a week. Room rent varies from seventy-five cents to two dollars a week for each student. Students arriving in Ann Arbor can obtain information in regard to rooms and board by calling at the Steward's office. A register of rooms is also kept at Newberry Hall, under the care of the Students' Christian Association.

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### **CORRESPONDENCE.**

Letters of inquiry may be addressed to Professor A. B. Stevens, Secretary, or to Professor Prescott, Dean, School of Pharmacy, Ann Arbor, Mich.

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## STUDENTS.

## HOLDERS OF FELLOWSHIPS AND OF GRANTS FOR RESEARCH.\*

NAME.	RESIDENCE.
Harry Mann Gordin, Ph.D., <i>University of Berne, Holder of Grant from the Committee of Revision and Publication of the Pharmacopœia of the United States,</i>	<i>San Francisco, Cal.</i>
Carl George Hunkel, Ph.G., <i>University of Wisconsin, B.S., ibid., Holder of the Stearns Fellowship in Pharmaceutical Research,</i>	<i>Milwaukee, Wis.</i>

## RESIDENT GRADUATES.†

NAME.	DEGREE.	CREDIT.	RESIDENCE.
Evi Dunn Benjamin, Ph.C.,	B.S.	92	<i>Pontiac.</i>
George Millard Heath, Ph.C.,	B.S.	68	<i>Milan.</i>
Frank Carleton Hitchcock, Ph.C.,			<i>Plainwell.</i>
Charles Willis Johnson, Ph.C.,	B.S.	71	<i>Ann Arbor.</i>
Edgar Livingstone Knapp, Ph.C.,			<i>Saginaw.</i>
William Kremers, Ph.C.,			<i>Holland.</i>
Bessie Gillespie Pierce, Ph.C.,			<i>West Bay City.</i>

## UNDERGRADUATES.†

NAME.	DEGREE.	CREDIT.	RESIDENCE.
John Newton Adams,	Ph.C.	66	<i>Sault Ste. Marie.</i>
Harry Albers,	Ph.C.		<i>Kirkwood, Mo.</i>
Harvey Lloyd Baer,			<i>Akron, O.</i>
Lyman Frederick Barlow,	Ph.C.	28	<i>Hastings.</i>
Ernest Joseph Belser,	Ph.C.		<i>Ann Arbor.</i>
Edwin Judson Bennett,	Ph.C.		<i>New Haven.</i>
Pearl Charlotte Bennett,	B.S.		<i>Ecorse.</i>
Harry Denman Berry,	Ph.C.	25	<i>Mount Sterling, Ky.</i>
John Broene,			<i>Grand Rapids.</i>
Walter Stephen Brooks,	B.S.	42	<i>Detroit.</i>

\* Paul Ingold Murrill, B.S., *Kentucky State College, M.S., ibid.*, a student enrolled in the Department of Literature, Science and the Arts, is also at work in the School of Pharmacy, under the grant from the Committee of Revision and Publication of the Pharmacopœia of the United States.

† The abbreviations in the column headed DEGREE indicate the degree for which the student is studying. Where no abbreviation is given, the student is pursuing miscellaneous studies without being registered as a candidate for a degree. The figures in the column headed CREDIT indicate the number of hours of work taken prior to the beginning of the current academic year, 1898-99, and completed without conditions, or credited on advanced standing. By an hour of work is meant the equivalent of one exercise a week for one semester. Compare page 11.



Mary Liston Brown,	Ph.C.		<i>Saint Joseph.</i>
Lavern Otis Cushing,	Ph.C.	31	<i>Dexter.</i>
Henry Fredrick Dreyer,			<i>Port Huron.</i>
Charles Anton Duerr,	Ph.C.	34	<i>Benton Harbor.</i>
Harold James Duncan, Ph.G., <i>Northwestern University,</i>			<i>Kalamazoo.</i>
Fred Rowland Dunning,	Ph.C.	34	<i>Vicksburg.</i>
George Eckel,	Ph.C.	30	<i>Petoskey.</i>
Herbert Roy Edmonds, Ph.G., <i>University of Buffalo,</i>	B.S.	15	<i>Mayville, N. Y.</i>
Edgar Charles Edsill,	Ph.C.		<i>Jackson.</i>
Herbert William Emerson,	Ph.C.		<i>Burlington, Ont.</i>
John Estill Ferris,	B.S.		<i>Ann Arbor.</i>
Llewellyn Elliott Frazier,			<i>Muskegon.</i>
Frank Leonard French,	Ph.C.		<i>Spring Arbor.</i>
Harry Gerber,	B.S.		<i>Fremont.</i>
Frederick Aloysius Gill,			<i>Grand Rapids.</i>
Charles Nicholas Greusel,	Ph.C.		<i>Sioux City, Ia.</i>
Alex Donald Gundry,	Ph.C.	19	<i>Grand Blanc.</i>
Oscar Henry Haarer,	Ph.C.	34	<i>Ann Arbor.</i>
Jessie Graham Hall, A.B., <i>Wellesley College,</i>	Ph.C.	36	<i>Olean, N. Y.</i>
Anna Katherine Haller,			<i>Ann Arbor.</i>
Herbert D. Harrington,	Ph.C.	34	<i>Parma.</i>
Edgar Steiner Hauenstein,	Ph.C.	5	<i>Bluffton, O.</i>
George Hebert,		20	<i>South Lake Linden.</i>
Harry Cook Hewitt,	Ph.C.	34	<i>Jackson.</i>
Clinton Whitney Hibbard,	Ph.C.	34	<i>Azusa, Cal.</i>
Ralph Hicks,	Ph.C.	34	<i>Dollar Bay.</i>
George Delbert Hilton,	Ph.C.	5	<i>Fremont.</i>
Warren Winslow Horne,	Ph.C.		<i>Fayetteville, N. C.</i>
Philip Kephart,	Ph.C.	34	<i>Berring Springs.</i>
Edward Nicholas Emil Klein,	Ph.C.		<i>College Point, N. Y.</i>
Kurt Kling,		10	<i>Detroit.</i>
Emory Elias Lewis,	Ph.C.		<i>Rockford, Ill.</i>
Eugene Chauvin McConn,	Ph.C.		<i>Fort Madison, Ia.</i>
Thomas Ambrose Major,	B.S.	43	<i>Manistee.</i>
John Richard Martin,	Ph.C.	5	<i>Ida.</i>
Carl Metzger,	Ph.C.	44	<i>Winchester, Ill.</i>
Willis Irving Millington,	Ph.C.		<i>Trenton, Mo.</i>
Olney Ray Morse,	Ph.C.	34	<i>Sanilac Centre.</i>
Ralph Clarke Nowland,			<i>Leadville, Col.</i>
Arthur Holmes Norton,			<i>Ann Arbor.</i>

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Augustus O'Brien,	Ph.C.		<i>Bessemer.</i>
David William Paton,	Ph.C.	27	<i>Almont.</i>
William Alexander Pearson,	Ph.C.		<i>Ann Arbor.</i>
Charles Bert Pettibone,	Ph.C.	37	<i>Farmington.</i>
Ernest Tracy Pettis,	Ph.C.	38	<i>Petoskey.</i>
Elmer Albert Phillips,	Ph.C.	41	<i>Sinclairville, N. Y.</i>
Georgiana Grace Robinson,	Ph.C.	34	<i>Battle Creek.</i>
George Rogers,	Ph.C.	34	<i>Amsterdam, N. Y.</i>
James Clayton Rusterholtz,	Ph.C.	34	<i>Sturgis.</i>
William Barié Saladin,		5	<i>Detroit.</i>
Hugo Joseph Schellinger,	Ph.C.	34	<i>Mishawaka, Ind.</i>
Frank Philip Seabury,	B.S.	34	<i>Paw Paw.</i>
Paul George Seibert,	Ph.C.	26	<i>Saint Johns.</i>
Burnette Burgoon Smith,	Ph.C.	24	<i>Fremont, O.</i>
Leonard Fred Steenman,	Ph.C.	34	<i>Howard City.</i>
George Giles Stilwell,	Ph.C.		<i>Jonesville.</i>
Will Earl Sullivan,	Ph.C.	23	<i>Owosso.</i>
Arthur Louis Todd,	Ph.C.		<i>Spring Arbor.</i>
Sigrid von Zellen,	Ph.C.		<i>Shanee.</i>
William Peter Welker,		25	<i>Leetonia, O.</i>
Frank Holmes Whiting,	Ph.C.	5	<i>Union City.</i>
Fred Leroy Woods,	Ph.C.	34	<i>Brownsville.</i>

## REGISTER OF ALUMNI.

**HISTORICAL.**—The Chemical Laboratory of the University opened to students in 1856. A course in operative pharmacy was added to the laboratory curriculum in 1869, and was held open to those who had completed at least one of the chemical courses. From the first the laboratory was provided for the use of students of all Departments of the University, so far as chemical studies enter into the curriculum of each, and this provision in common for all the departments has continued to the present. From 1860 to 1868 Certificates of Proficiency were granted to students of any department who had completed with credit one or more of the laboratory courses of experimental study and had passed the chemical examinations. Of those who received the certificates some have followed chemistry as a profession, and their names so far as known are given with residence and occupation in the Alumni Register of Practicing Chemists of the University.

The laboratory course in operative pharmacy had been taken by students of the Department of Medicine, students of the Department of Literature and Science, and by special chemical students, for eight years, and to the number of one hundred and twenty-one persons, before the organization of a Department of Pharmacy. Of these early students of chemistry and pharmacy a directory of residence and occupation cannot now be given.

The School of Pharmacy was organized in 1868, at first as a polytechnic division of the Department of Literature, Science, and the Arts. The charter of the School rests upon the acts of the Regents of the University in 1868 and 1876, the laws of the State in 1851, and the Constitution of Michigan. THE DEGREE OF PHARMACEUTICAL CHEMIST, with the diploma of graduation in pharmacy, was first conferred in 1869. THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY was first conferred in 1897. THE DEGREE OF MASTER OF PHARMACY was conferred, as a second degree upon examination, on a number of persons from 1887 to 1895. The published Register of Alumni contains the names of those who have graduated in pharmacy at the University. The names of non-graduates have not been published as yet in this directory, though this is desirable.

THE ALUMNI REGISTER FROM 1869 TO 1895, issued separately, will be sent upon application. It contains the names of 696 graduates. It is to be revised for issue in 1900.

The "General Catalogue of Officers and Students of the University," 1837 to 1890, 472 pages (\$1.75), contains the names of Non-graduate Students in the School of Pharmacy, to the number of 227, with residence and occupation so far as obtained. This "General Catalogue" is being revised for a new edition.

The total number of graduates in the School of Pharmacy is 765.

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### GRADUATES.

Holding the degree of Pharmaceutical Chemist, and other degrees specified.

1895.

- BOWERFIND, HENRY J.—With the Meyer Brothers, Prescription Pharmacists; since with Fort Wayne Drug Company, Fort Wayne, Ind.
- BUNN, CLAUDE M.—Sometime in the firm of Bunn & Poel Drug Co., Kalamazoo, Mich. Pharmacist, Cocoa, Fla.
- DE JONGE, CORNELIUS.—Pharmacist with A. H. Lyman Co., Manistee, Mich., until 1897. Analytical Chemist with Edward R. Squibb & Sons, manufacturing pharmacists, 39 Doughty St., Brooklyn, N. Y.
- DOEHNE, GEORGE, Jr.—Sometime with A. T. Hall, 428 Wabash St., St. Paul. Has a pharmacy in St. Paul, Minn.
- DOTY, GILBERT A.—In the manufacturing laboratory of Parke, Davis & Co., Detroit.
- DRAKE, CHARLES F.—Graduate Student in 1895-96. With Swift & Co., Union Stock Yards, Chicago, Ill.
- HERZER, HENRY A.—Manager of a pharmacy in Eaton Rapids, Mich.
- JUDY, JOHN N.—The Queen City Pharmacy, Cumberland, Md.
- KNAPP, EDGAR L.—Sometime with Doak & Orrison, Springport, Mich. Now in graduate studies in this school.
- KNOX JAMES W. T.—In 1895-7 the holder of the Stearns Fellowship. In the Scientific Department of Frederick Stearns & Co., Detroit, Mich., and editor of "The New Idea." Instructor in Practical Pharmacy in the Department of Pharmacy of the Detroit College of Medicine.
- MALLET, ELGIN.—Pharmacist with Nelson Mallett, Trenton, Mo.
- MARSH, FAY M.—In pharmacy with E. C. Haynes, Davison, Mich.
- MESSINGER, GARRY W.—Pharmacist for the Valley City Drug Co., 196 E. Bridge St., Grand Rapids, Mich.

- REESE, ERNEST G.—Lincoln's Pharmacy, Bowling Green, Ohio.
- STEINCAMP, CHARLES H.—Has a pharmacy at 721 Utica St., Toledo, Ohio.
- TEETERS, WILBER J.—B.S., *Mount Union Coll.*, 1893. Demonstrator of Chemistry, Medical Department, State University of Iowa, Iowa City.
- WASHBURN, EDWARD E.—With Washburn & Skinner, Pharmacists, New London, Ohio.
- WASHBURN, JOHN L.—Sometime with E. E. Calkins, Ann Arbor, Mich. Has a pharmacy in Medina, N. Y.
- WATERS, HORACE H.—Sometime in the study of Medicine, University of Michigan. In pharmacy, Summit St., Toledo, O.

## 1896.

- AMES, JAMES W.—Pharmacist with S. E. Welch, Jr., Berea, Ky.
- BAUM, CLARENCE H.—B.S. (Phar.), 1898. In graduate studies for M.S. (Phar.) in 1898. Manager in pharmacy for his father, Danville, Ill.
- DERRY, JOHN W.—Baltimore, Md. (?)
- DIEHL, OSCAR C.—Resident Graduate, in 1896-7, employed in research by the Committee of revision of the United States Pharmacopœia. Chemist in Biological Department of Parke, Davis & Co., Detroit, Mich.
- HEATH, GEORGE M.—Sometime a pharmacist in Milan, Mich. Graduate student in studies for B.S. in this school.
- HITCHCOCK, FRANK C.—Pharmacist with E. H. Haag, Ph.C., 1892. 601 Monroe St., Toledo, Ohio. In graduate studies in this school.
- HORTON, CHARLES R.—With F. W. R. Perry, Ph.C., 1880, member Michigan State Board of Pharmacy, 709 Woodward Ave., Detroit, Mich.
- JOHNSON, CHARLES W.—Sometime with A. L. Walker, Ph.C., 1879, 415 Woodward Ave., Detroit, Mich. Now assistant instructor in qualitative chemistry, in this university.
- NISBET, ROBERT J.—Pharmacist with E. B. Macy, 9901 Ewing Ave., Chicago, Ill.
- OSTRANDER, EDWIN J. F.—Pharmacist for Grace Hospital, Detroit, Mich.
- SANDERS, ISIDORE.—Pharmacist with A. Wiley, Trinidad, Col.
- SCHMITT, EDWARD L.—In pharmacy with Joseph M. Schmitt, 312 North St., Rochester, N. Y.
- SMITH, HARRY T.—Chemist with the Lancaster Caramel Co., Lancaster, Pa.

- TABER, ROLAND B.—In pharmacy with Harry L. Bird, Benton Harbor, Mich.
- TAYLOR, HENRY W., B.S., *Earlham College*.—With D. W. Curry, wholesale and retail drug business, Rome, Ga.
- TROWBRIDGE, MILES L.—Resident Graduate in 1896-7. In pharmacy, cor. 136th St. and 7th Ave., New York.
- TROWBRIDGE, MILTON L.—Resident Graduate in 1896-7. Chemist with Buschemeyer Brothers, Louisville, Ky.
- \*VON WALTHAUSEN, CHARLES A. F.—Some time in pharmacy in Bay City, Mich. A private in the Thirty-first Michigan Infantry in the war with Spain. Died at Camp Thomas, Chickamauga, Aug. 10, 1898.
- WEAVER, CLARENCE A.—Pharmacist with F. W. Perry, 709 Woodward Ave., Detroit, Mich.
- WILDER, GEORGE P.—Assistant in qualitative chemistry, 1895-6. Has a pharmacy on State St., Ann Arbor, Mich.
- WILLIAMS, ELISHA B.—Assistant in manufacturing pharmacy with Parke, Davis & Co., Detroit, Mich.
- WILSON, FRANK H.—Pharmacist with C. B. Gatton, Virginia, Ill.
- WORDEN, EDWARD C.—Assistant chemist, for nitrogen determination, New York State Agricultural Experimental Station, Geneva, N. Y., until 1898. Vice Pres. of Stearns & Crane's laboratory of chemistry and bacteriology, 44 Montgomery St., Jersey City, N. J.

## 1897.

- AUSTIN, FREDERICK J.—In pharmacy with George J. Wiesinger, 598 Michigan Ave., Detroit, Mich.
- BACHELDER, EVA A. T.—In pharmacy with John Frisch, St. Charles, Minn.
- BACHMAN, JOHN S.—In pharmacy with S. Hemens, So. Lyons, Mich.
- BARINGER, FREDERICK J.—Analytical Pharmacist and Pharmacologist with W. S. Merrill Chemical Co., Cincinnati, O.
- BENJAMIN, EVI D.—Assistant in Pharmacy in this school, 1897-9. Now chemist with Dr. A. B. Lyons, Nelson, Baker & Co., Detroit, Mich.
- BOGGESE, NORMAN T.—Pharmacist with T. N. Boggess, Huntington, W. Va.
- BROWN, JOHN H.—In pharmacy with Geo. W. Brown, Wilmington, O.
- COBB, JAMES W.—In pharmacy with E. E. Calkins (Ph.C. 1884), Ann Arbor, Mich.
- CRITCHETT, OTIS A.—In pharmacy until April, 1898. In Thirty-first Michigan Volunteers in the war with Spain. Assaying in Sierra Moyada, Coahuila, Mexico.

- FRANK, EDWARD C.—Broker, 5 Maple St., Roxbury, Mass.
- GOTT, EDWARD S.—Pharmacist in the firm of McKeehan & Gott, 807 Second St., Fort Madison, Ia.
- HALL, NELSON A.—In pharmacy with Randall & Conway, Sault Ste. Marie, Mich.
- HOGREFE, LOUIS T. W.—In pharmacy and chemistry, 319 E. Mt. Vernon St., Springfield, Mo.
- LUTES, JOHN W.—In pharmacy, Belding, Mich.
- NICHOLS, CLARA E.—With Barth & Warren, 674 Wealthy Ave., Grand Rapids, Mich.
- NIVLING, WALTER A.—In 1898–9, First Sem., Assistant in qualitative chemistry in this University. Chemist for the Sioux City Starch Co., Sioux City, Ia.
- NOLL, WILLIAM H.—Pharmacist, Fort Wayne, Ind.
- RICH, S. AGNES.—Pharmacist with Loranger & Culver, Saginaw, E. Side, Mich.
- RICHTER, SARA E.—MRS. ESTHER RICHTER SMITH.—Pharmacist with T. W. Wooton, 942 W. Madison St., Chicago, Ill. Address, 110 DeKalb St., Sta. D.
- STEVENS, ALICE M.—In pharmacy at Tomahawk, Wis.
- STODDARD, HARRY S.—In pharmacy with C. A. Stoddard, 15 Trout St. E., Monroe, Mich.
- STURGIS, AMOS D.—Pharmacist with Page & Alger, Cor. Plainfield and Coit Aves., Grand Rapids, Mich.
- WAGNER, CHARLES L.—Sometime with William S. Merrill Chemical Co., Cincinnati, O. Now in pharmacy in Brooklyn, O.

## 1898.

- BAUM, CLARENCE H.—Ph.C. '96; B.S. (Phar.) '98. (See 1896.)
- BIEHL, CARL I.—With L. A. Biehl, Pharmacist, Sandusky, O.
- BLOME, WALTER H.—In pharmacy with Geo. S. Williamson, Port Huron, Mich.
- CORAM, JOHN A.—Pharmaceutical Chemist with Weeks & Co., manufacturers and dealers in pharmacy, Jackson, Mich.
- COULTER, MISS AIMÉE.—Engaged in pharmacy. No. 305 Leavitt St., Chicago, Ill.
- DOUGLAS, HARRY E.—Assistant in pharmacy, with Dr. J. J. Good-year, Ann Arbor.
- GOFF, CHARLES D.—With Dr. Charles J. Lindsay, pharmacist, 607 N. Alameda St., Los Angeles, Cal.
- GORENFLO, OSCAR W.—In dispensing pharmacy With O. C. Schettler, Detroit, Mich.
- HAWES, MARK B.—With E. T. Webb, pharmacist, Jackson, Mich.

- HAYDEN, BERT L.—In pharmacy with Giddings & Hyndman, Jackson, Mich.
- KREMERS, WILLIAM.—In graduate studies in university, until April, 1899. In pharmacy with his father, Holland, Mich.
- SCHAUPNER, PHILIP.—Prescriptionist with Eberbach & Son, Ann Arbor.
- SCHILLER, EDGAR.—Has a pharmacy in Ames, Iowa.
- SCHMIDT, HENRY P.—In the drug business with H. W. Schmidt, Anacortes, Washington.
- SERVICE, CAROLINE B.—In the manufacturing laboratory of Parke, Davis & Co., Detroit, Mich.
- SHORT, LEONARD.—With the A. H. Lyman Drug Co., Manistee, Mich.
- TABER, HERBERT E.—In pharmacy with Elias Carpenter & Co., Providence, R I.
- VAN ZWALUWENBURG, ABRAM.—Ph.C., '87; B.S. (Phar.), '98.—Holder of the Stearns Fellowship of Research in 1897-98. In graduate studies for the master's degree in 1898-99. For several years prior to 1897 a metallurgical chemist and superintendent of works in San Louis Potosi, Mexico. Engaged for charge of metallurgy in the Union Correspondence School, Scientific Publ. Co., 253 Broadway, New York City.
- WATKINS, CHARLES F.—In the study of medicine in this University, third year, Department of Medicine and Surgery.
- WILSON, WILLIAM, Jr.—Proprietor in pharmacy at 43 E. Main St., Amsterdam, N. Y.
- ZIMMERMAN, SAM H.—With Lapere Brothers, Third and Central Ave., Great Falls, Mon.

#### CHANGES IN THE DIRECTORY OF THE ALUMNI, 1869-1895.

- ATWOOD, DANIEL W.—Ph.C., 1897. The French Street Pharmacy, Wilmington, Delaware.
- BAIRD, JULIAN W.—A.M.; Ph.C., 1883. Instructor in analytical chemistry Lehigh University until 1886, and since then a professor in the Massachusetts College of Pharmacy, Boston. Is dean of the faculty. M. D. *Harvard*, 1890.
- BAKER, FRED W.—Ph.C., 1890. Pharmacist, Broadway and 38th St., N. Y.
- BARNHART, CLARENCE E.—Ph.C., 1894. Woolf's Pharmacy, Peoria, Ill.
- BAUMHARDT, ADAM J.—1887; M. D., 1895. Physician, Loraine, O.



- BOWEN, THOMAS W.—B.S.; Ph.C., 1889. Mining Engineer, P. O. box 700, Salt Lake City, Utah.
- BOYCE, SAMUEL R.—Ph.C., 1890. Instructor in pharmacy in University of Kansas until 1864. In fourth year of medical studies in this University.
- CADY, WALTER B.—Ph.C., 1892; B.S. (Phar.), 1897. Assistant chemist at the New York State Agricultural Experimental Station, Geneva, N. Y., until 1895. Assistant in agricultural chemistry, University of the State of Missouri; assistant chemist, Agricultural Experimental Station, Columbia, Mo.
- CRAMPTON, CHARLES A.—B.L.; M. D.; Ph.C. 1882. The chemist of the Internal Revenue Department, Washington, D. C.
- CROWLEY, CHARLES F.—Ph.C., 1889. Professor of Chemistry, Creighton Medical College, Omaha, Neb.
- \*DAVIS, CHARLES L.—Ph.C., 1885. Had been for some years a chemist for the Illinois Steel Company. Died March 2, 1898.
- DAVOLL, DAVID LAKE, JR.—Ph.C., 1893; B.S., 1897. In 1894-6 in the research Laboratory of Parke, Davis & Co. Instructor in chemistry in this University in 1896-7. Professor of Pharmaceutical Chemistry in Northwestern University, 2421 Dearborn St., Chicago, Ill.
- DAWSON, BYRON F.—Ph.C., 1879; M. D., 1886. Pharmacist at Rochester, Ind., until 1882. Manager in manufacturing pharmacy in Peoria, Ill., until 1885. M. D., *Jefferson Medical College*, Philadelphia, 1897. Has The Seaside Pharmacy, Cayucos, Cal.
- DOTY, WIRT P.—Ph.C., 1886. Doty Brothers, corner Woodward Ave. and Willis Ave., Detroit. Member of the Michigan State Board of Pharmacy.
- EWELL, ERWIN E.—Ph.C., 1888. Assistant instructor in this University until 1890. Now assistant chief chemist in the Chemical Division of the Department of Agriculture at Washington, where he has been engaged since leaving college.
- FLINT, MERRILL S.—Ph.C., 1889. Formerly in charge of the drug department of the Chateauquay Ore & Iron Co., Lyon Mountain, N. Y. With H. C. Hulbert & Co., Wholesale Paper and Paper Mill Supplies, 53 Beckman St., New York City.
- FRANK, HERMANN O.—Ph.C., 1883. Pharmacist at 435 Milwaukee St., Milwaukee, Wis. Some years a member of the Wisconsin State Board of Pharmacy.
- FROM, JOHN D.—Ph.C., 1893. Some time in pharmacy in Arizona. Then a student of architecture in University of Pennsylvania. Architect with D. D. Walker, Marine Building, Toledo, Ohio.
- FROST, HENRY J.—Ph.C., 1889; M. D., 1894. Rockford, Ill.

- GEDDES, LILLIAN M.—Ph.C., 1893. Proprietor in pharmacy at 393 Cambridge St., Allston, Mass.
- GERKINSMEYER, HENRY H.—In chemical studies 1895-97. Doing chemical work in the analytical laboratory of Parke, Davis & Co., Detroit.
- GRIFFIN, TRUMAN.—Ph.C., 1889. Member Minnesota State Board of Pharmacy, 101 Washington Ave., Minneapolis, Minn.
- HESSE, BERNHARD C.—Ph.C., 1889; B.S. (Chem.), 1893; Ph.D., *Chicago* 1896. Chemist in the service of Badische Anilin und Soda Fabrik, of Ludwigshafen, Germany. Wm. Pickardt & Kuttroff, special partner, 128 Duane St., New York City, P. O. box 2885.
- HAVENHILL, L. D.—Ph.C., 1893; Phar. M., 1894. Assistant in pharmacy in this University in 1893-94. Analytical chemist in Honolulu, H. I., 1895-96. Chemist for the Chicago Refining and Smelting Company, Aurora, Ill.
- HILL, CHARLES O.—A.B., *University of Tennessee*; Ph.C., 1893. Instructor in Pharmacy University of Tennessee, 1008 Rose Ave., Knoxville, Tenn.
- HIRTH, GEORGE J.—Ph.C., 1889; M. D., 1891; *University of Berlin*, 1892. Professor of histology, etc., Milwaukee Medical College. Physician, 66 Fargned Avenue, Milwaukee, Wis.
- HOUGHTON, ELIJAH M.—Ph.C., 1893; M. D., 1894. Assistant in Pharmacology in this University in 1895. In charge of the laboratory of pharmacology of Parke, Davis & Co., Detroit.
- HUBER, CHARLES F.—Ph. C., 1884. Huber & Lohrstorfer, (Joseph Lohrstorfer, Ph.C., '92), pharmacists, Port Huron, Mich.
- HUBBARD, JOHN L.—Ph.C., 1891. Manager of the pharmacy of J. W. Fleming, 700 Genesee Ave., Saginaw, E. S., Mich.
- JACKMAN, WILBUR F.—B.S., 1886, Ph.C., 1887. A pharmacist in Detroit until 1895, and since professor in charge of the Department of Pharmacy in the University of Maine, Orono, Me.
- LAKE, CHARLES N.—Ph.C., 1884; M. D. Sometime instructor in the chemical laboratory of Lehigh University, and in 1885-86 in the manufacturing laboratory of W. H. Schieffelin & Co., New York City. Physician, 528 Baker St., Detroit.
- LEWIS, I. G.—Dept. L. S. A., 1864-67; Phar. M., 1891. Robert Stevenson & Co., (Robert Stevenson, I. Giles Lewis, Arthur Dawson,) wholesale druggists, 92 Lake St., Chicago.
- LYONS, ALBERT B.—M. A., *Williams College*; M. D., 1868. F.C.S. London. Some time Professor of Chemistry in Oahu College, H. I. Nelson Baker & Co., manufacturing pharmacists, Detroit, 72 Brainard St., Detroit.

- MERKEL, CHARLES W.—Ph.C., 1893. Pharmacist at Broadfield, Salem county, Mich.
- MEYER, THEODORE F.—Ph.C. 1878. Meyer Brothers Drug Company, St. Louis, Mo.
- MEYER, OTTO P.—Ph.C. 1890. Chemical manager, Meyer Brothers Drug Company, St. Louis, Mo.
- MILLER, EMERSON R.—Ph.C., 1892; Phar. M. 1893; B.S. (Chem.), 1894; M. S., 1895. Professor of Pharmacy, in charge of the Department of of Pharmacy in Alabama Polytechnic Institute, Auburn Ala.
- MINER, MAURICE A.—Ph.C., 1871; Phar. M. 1897. Professor of Pharmacy in the Northwestern University, 2421 Dearborn St., Chicago.
- MITCHELL, ANDREW S.—Ph.C., 1887. Analytical chemist. Chemist of the Wisconsin State Dairy and Food Commission, 436 Milwaukee St., Milwaukee, Wis.
- MORRIS, GEORGE A.—Ph.C., 1893. With the West Chemical Co. Address, 246 Harrison Ave., Detroit.
- MURDOCK, THOMAS E.—Ph.C., 1894. Murdock Brothers, pharmacists, Northville, Mich.
- MURRAY, BENJAMIN L.—Ph.C., 1891; B.S. (Chem.), 1896; B.S. (Phar.), 1897. Chemist and bacteriologist at the Merck Pharmacy, Merck Building, University Place, New York City.
- NICHOLS, MARION F.—Ph.C., 1894. Chemist for the Wallin Leather Co. Residence 228 E. Bridge St., Grand Rapids, Mich.
- PARKER, ARTHUR S.—Ph.C., 1879. President of the state association in 1895. Pharmacist, 747 Woodward Ave., Detroit. Engaged for Parke, Davis & Co.
- PARKER, ROLAND J.—Ph.C., 1885. Pharmacist, Moreet, Mo.
- PATTERSON, GEORGE H.—Ph.C., 1892. Chemist, Economy Supply Co., 60 Wabash Ave., Chicago, Ill.
- PECK, FRANCIS J.—Ph.C., 1891. Graduate student in metallurgical chemistry, 1892. Some time city chemist in Cleveland. Crowell and Peck, chemists, metallurgists, mining engineers, etc., 71 Atwater Building, Cleveland, O.
- RUDDIMAN, EDESEL A.—Ph.C., 1886; Phar. M. 1887; M. D., *Vanderbilt*, 1893. Professor in charge of the department of Pharmacy in Vanderbilt University, Nashville, Tenn. Author of "Incompatibilities in Prescriptions." 1897.
- RUSSELL DORIAN M.—Ph.C., 1891. In chemical work in the house of Parke, Davis & Co., Detroit.
- SHERER, WILLIAM.—Ph.C., 1893 With the Payne Drug Co., wholesale and retail, 24-26 East Main St., Rochester, N. Y.

- SHEPHERD, FRANK I.—Ph.C. 1891; A. B. *Stanford University* Cal. 1895. Some time in the glycerine department of the Globe Soap Works in Cincinnati. Fellow in Chemistry, University of Cincinnati. Professor of Chemistry, University of Denver, University Park, Col.
- SMITH, MARIE R.—Ph.C., 1888; M.D., 1894. Some time in Holland's pharmacy, 55th and Madison Ave., Chicago. Physician, Garfield Boulevard and Madison Ave., Chicago. A professor in Medical Mission College.
- SNOW, HERBERT W.—Ph.C., 1884. Formerly analytical chemist in the laboratory of F. Stearns & Co. Chemist and manager of The U. S. Pharmacal Company, 32 Market St., Chicago.
- SELTZER, LEONARD A.—Ph.C., 1892. In the prescription pharmacy and analytical laboratory of F. W. R. Perry (Ph.C., 1880), 709 Woodward Ave., and 32 Adams Ave., West, Detroit.
- THOMPSON, FRANK A.—Ph.C., 1881. Graduate student in 1882-83. For some time chief in the analytical laboratory of Parke, Davis & Co. F. A. Thompson & Co., manufacturing chemists, Detroit.
- TIBBALS, WILLIAM J.—Ph.C., 1890. Graduate student in 1891-92. City chemist for the board of health, Antoine and Clinton Sts., Detroit.
- WAGGONER, ALBERT T.—Ph.C., 1884. At his old drug store in Topeka, Kansas.
- WAIT, CORA L.—Ph.C., 1890. Some time prescription pharmacist at Northern Michigan Insane Asylum. Mrs. Fred B. Culver, 1897. Saginaw, E. S., Mich.
- WATERMAN, CHAUNCEY N.—Ph.C., 1888. Chemist with the Chicago Varnish Company, Chicago, Ill.
- WEEKS, EUGENE J.—Ph.G., *New York*, 1866; Ph.C., *Mich.*, 1870. The Weeks Drug and Chemical Co., Jackson Mich.
- WILLIAMS, CHARLES H.—Ph.B., *Adrian*; Ph.C., 1894; M.D., 1898; M.D., complimentary, *Jefferson Med. Coll.*, Phila., 1899. The de Schweinitz scholarship gold medal, same college. Assistant in pharmacognosy in this school in 1895-96.
- WRAMPMEIER, THEODORE J.—A.B.; Ph.C., 1878. Chemist for the Internal Revenue office. Consulting chemist for Cal. Powder Works. Manufacturing chemist, 309 Sansome St., San Francisco, Cal.
- YOUNG, ROY D.—Ph.C., 1890; Phar.M., 1892; B.S., *Harvard*, 1894; M. D., *Coll. Physicians*, N. Y., 1898. Some time assistant chemist at the Geneva, N. Y., Experiment Station. Physician 11 Palmer St., Arlington, Mass.

# INDEX TO NAME OF GRADUATES, WITH YEAR OF GRADUATION.

Abbey, C. C. ....	'89	Baum, C. H. ....	'96
Adams, Alfred W. ....	'71	Baum, C. M. ....	'75
Adams, Arthur W. ....	'91	Baumhardt, A. J. .... (p. 32)	'87
Alcorn, G. S. ....	'86	Beach, L. F. ....	'76
Alder, S. W. ....	'83	Beal, E. R. ....	'87
Allen, C. P. ....	'88	Becker, C. L. ....	'81
Allen, H. E. ....	'92	Benton, Lou N. ....	'93
Allen, J. A. ....	'81	Benjamin, E. D. ....	'97
Allen, S. E. ....	'76	Berry, R. W. ....	'91
Allison, C. W. ....	'88	Biehl, C. J. ....	'98
Allmand, C. W. ....	'84	Bird, H. L. ....	'91
Allmendinger, C. G. ....	'82	Birkmier, H. W. ....	'92
Allshouse, H. A. ....	'89	Bliss, H. ....	'69
Allworth, J. E. ....	'89	Block, L. H. ....	'89
Amerman, A. S. ....	'71	Bloomfield, E. M. ....	'69
Ames, J. H. ....	'76	Blome, W. H. ....	'98
Ames, W. A. ....	'96	Blum, E. ....	'84
Ando, Shinichi ....	'91	Bodeman, F. E. ....	'73
Armstrong, I. A. ....	'79	Boden, E. T. ....	'80
Armstrong, R. B. ....	'90	Boehme, C. A. ....	'78
Armstrong, R. S. ....	'94	Boetcher, C. V. ....	'89
Arnold, C. F. ....	'69	Boise, E. P. ....	'62
Ashley, W. F. ....	'91	Boggess, N. T. ....	'97
Atwood, D. W. .... (p. 32)	'92	Boughton, E. G. ....	'76
Austin, F. J. ....	'97	Bowdish, G. A. ....	'89
Avery, J. H. ....	'77	Bowen, R. F. ....	'79
Ayers, J. N. ....	'79	Bowen, T. W. .... (p. 33)	'89
Babbitt, E. T. ....	'83	Bower, F. T. ....	'76
Bachelor, Eva A. T. ....	'97	Bowerfind, H. J. ....	'95
Bachman, J. S. ....	'97	Boyce, S. R. .... (p. 33)	'90
Baert, G. H. ....	'90	Boyd, J. P. ....	'73
Bailey, F. C. ....	'81	Braddock, O. L. ....	'71
Baird, J. W. .... (p. 32)	'83	Briggs, Perry ....	'91
Baker, C. ....	'87	Brockmeier, J. H. ....	'82
Baker, C. W. ....	'90	Brooks, F. A. ....	'78
Baker, F. W. .... (p. 32)	'90	Brown, J. H. ....	'97
Banister, J. L. ....	'86	Brown, J. G. ....	'73
Bancroft, R. B. ....	'81	Buchanan, W. A. ....	'70
Barie, H. L. ....	'87	Buckham, A. J. ....	'86
Baringer, F. J. ....	'97	Buckham, J. N. ....	'76
Barnhart, C. E. .... (p. 32)	'94	Bunn, Claude M. ....	'95
Barnabee, H. S. ....	'83	Burgess, H. ....	'91
Barry, B. T. ....	'89	Burke, W. H. ....	'84
Bassett, E. C. ....	'83	Burnett, C. J. ....	'72

Burroughs, C. S. ....	'76	Crane K. (Mrs. Johnson) ....	'74
Burt, J. C. ....	'75	Critchett, O. A. ....	'97
Cady, W. B. .... (p. 33)	'92	Croman, J. M. ....	'87
Calkins, E. E. ....	'84	Crombie, S. M. ....	'82
Calkins, H. W. ....	'78	Crowley, C. F. .... (p. 33)	'89
Campbell, A. ....	'91	Cunningham, H. ....	'82
Campbell, W. G. ....	'79	Cunningham, T. N. ....	'85
Carey, W. S. ....	'71	Curtis, A. C. ....	'71
Carley, G. L. ....	'82	Cushing, G. M. ....	'84
Carr, L. B. ....	'87	Cushman, H. DeP. ....	'69
Carssow, R. B. ....	'92	Damon, B. W. ....	'83
Cary, J. C. W. ....	'70	Damon, W. E. ....	'84
Case, E. T. ....	'84	Daniels, G. B. ....	'86
Case, M. T. ....	'69	Davis, Frank F. ....	'91
Case, T. G. ....	'70	Davis, C. L. .... (p. 33)	'85
Chamberlain, F. J. ....	'89	Davis, L. M. ....	'74
Chapel, Fred N. ....	'93	Davoll, D. L., Jr. .... (p. 33)	'93
Church, S. K. ....	'89	Dawson, B. F. .... (p. 33)	'79
Church, W. D. ....	'79	Dawson, G. V. ....	'84
Churchill, P. ....	'91	Dawson, J. H. ....	'83
Churchill, O. L. ....	'76	Dean, G. E. ....	'82
Cirkler, C. H. ....	'81	De Jonge, Cornelius ....	'95
Clark, E. W. ....	'86	Denison, J. J. ....	'82
Clark, F. M. ....	'85	Denny, J. D. ....	'83
Clark, G. ....	'82	Derry, J. W. ....	'96
Clark, J. B. ....	'80	Deyo, L. H. ....	'82
Clark, J. T. ....	'76	Dickinson, O. B. ....	'75
Coad, N. G. O. ....	'75	Diehl, O. C. ....	'96
Cobb, J. W. ....	'97	Dietrick, C. W. ....	'76
Cody, Bert E. ....	'92	Dilworth, M. (Mrs. Comly) ....	'82
Coffin, C. L. ....	'84	Dingley, C. A. ....	'76
Cole, W. W. ....	'79	Dixon, G. F. ....	'77
Coleman, Sheldon ....	'93	Dodd, C. W. ....	'82
Collins, C. F. ....	'72	Doehne, George, Jr. ....	'95
Collins, W. E. ....	'90	Doehne, W. H. ....	'87
Condon, W. D. ....	'86	Dothany, W. A. ....	'87
Conrad, J. F. ....	'84	Doty, G. A. ....	'95
Conrads, J. R. ....	'86	Doty, J. W. ....	'86
Cook, A. D. ....	'92	Doty, W. P. .... (p. 33)	'86
Cook, G. S. ....	'73	Douglas, H. E. ....	'98
Cooke, F. A. ....	'83	Douglas, S. T. ....	'74
Cooper, W. H. ....	'84	Drake, C. F. ....	'95
Coram, J. A. ....	'98	Drake, Fred D. ....	'92
Corbin, John W. ....	'91	Dryfoos, L. A. ....	'87
Cotton, R. M. ....	'74	Duncan, C. G. ....	'74
Coulter, Aimée ....	'98	Dunn, J. S. ....	'85
Coughlin, J. ....	'76	Dunn, W. L. ....	'89
Covert, S. ....	'69	Dupont, R. S. ....	'87
Craig, J. T. ....	'84	Eastwood, J. F. ....	'74
Crampton, C. A. .... (p. 33)	'82	Eaton, H. K. ....	'86
Crampton, C. B. ....	'71	Eaton, J. M. ....	'79

Eaton, Mattie.....	'84	Goetter, F. B. ....	'83
Eberbach, W. F. ....	'88	Goff, C. D. ....	'98
Eddy, C. H. ....	'76	Goodrich, L. A. ....	'82
Egeroff, A. (Mrs. Fuller).....	'78	Gorenflo, O. W. ....	'98
Ehrhardt, H. ....	'74	Gott, E. S. ....	'97
Ellis, L. A. ....	'87	Gower, A. C. ....	'70
Emanuel, Julia E. ....	'89	Graham, A. B. ....	'93
Epley, A. W. ....	'94	Graham, J. B. ....	'71
Ewell, E. E. .... (p. 33)	'88	Greaves, Edith E. (Mrs. White).....	'91
Ewell, H. P. ....	'85	Green, F. A. ....	'91
Ewing, F. ....	'70	Green, M. U. ....	'76
Faber, Fred. ....	'93	Greene, A. L. ....	'82
Farnum, L. ....	'94	Gries, J. M. ....	'91
Fasquelle, L. J. ....	'82	Griffin, T. .... (p. 34)	'89
Fellows, C. A. ....	'80	Griffith, W. F. ....	'77
Felt, G. H. ....	'86	Griggs, O. ....	'75
Field, E. C. ....	'83	Grimwood, C. ....	'76
Finley, W. E. ....	'79	Grochau, E. A. ....	'94
Fischer, Richard.....	'92	Gunder, S. H. ....	'81
Fitch, H. A. ....	'71	Gundrum, G. ....	'76
Flanders, A. G. ....	'85	Guy, O. G. ....	'70
Flick, O. C. ....	'71	Haag, E. H. ....	'92
Flint, M. S. .... (p. 33)	'89	Hagle, P. N. ....	'70
Foote, C. E. ....	'80	Haigh, C. T. ....	'86
Ford, C. E. ....	'70	Haigh, D. L. ....	'85
Ford, J. M. ....	'69	Hale, A. K. ....	'73
Fox, A. L. ....	'69	Hall, N. A. ....	'97
Frank, E. C. ....	'97	Hall, G. C. ....	'83
Frank, H. O. .... (p. 33)	'83	Hallock, A. A. ....	'77
Franz, H. S. ....	'89	Hance, S. S. ....	'87
Frazee, F. H. ....	'84	Harrington, H. L. ....	'81
Fritts, F. F. ....	'74	Harris, B. A. ....	'77
Fromm, J. D. .... (p. 33)	'93	Harvey, C. B. ....	'84
Frost, H. J. .... (p. 34)	'80	Harvey, G. ....	'74
Fuller, L. C. ....	'76	Hasbrouch, W. A. ....	'78
Gage, C. T. ....	'79	Hatch, H. F. ....	'70
Gardner, L. H. ....	'84	Hauck, T. ....	'77
Gatchell, E. E. ....	'81	Hauenstein, W. ....	'83
Gates, W. H. ....	'77	Havenhill, L. D. .... (p. 34)	'93
Gebauer, C. J. ....	'80	Hawes, G. S. ....	'90
Geddes, A. B. ....	'85	Hawes, M. B. ....	'98
Geddes, Lillian M. .... (p. 34)	'93	Hawley, E. P. ....	'79
Geisler, J. F. ....	'80	Hawks, R. E. ....	'88
Gentsch, G. T. ....	'71	Hayden, B. L. ....	'98
George, E. L. ....	'69	Heard, Mary K. ....	'92
Gessler, M. ....	'82	Hearne, Joseph C. ....	'91
Gibson, E. D. ....	'78	Heath, G. M. ....	'96
Gibson, W. M. ....	'83	Heath, R. M. ....	'89
Glazier, F. P. ....	'80	Heim, H. ....	'78
Godfrey, C. P. ....	'84	Heim, W. ....	'82
Goecker, L. ....	'82	Heimbach, S. J. ....	'79

Heister, C. W. ....	'78	Janney, R. L. ....	'89
Hendershott, F. P. (Mrs. Hen- ning) .....	'87	Jarman, E. M. ....	'90
Henning, E. L. ....	'69	Jarvis, J. W. ....	'69
Henning, F. J. ....	'87	Jensen, P. C. ....	'79
Henry, G. C. ....	'74	Jenter, C. G. ....	'89
Herzer, H. A. ....	'95	Jewett, H. S. ....	'70
Hesse, B. C. .... (p. 34)	'89	Johnson, B. L. ....	'89
Higgins, G. E. ....	'70	Johnson, C. S. ....	'75
Higley, W. K. ....	'83	Johnson, C. W. ....	'96
Hill, C. O. .... (p. 34)	'93	Johnson, J. S. ....	'77
Hirth, G. J., Jr. .... (p. 34)	'89	Johnson, Marion, E. ....	'77
Hirth, P. H. ....	'86	Johnson, O. C. ....	'71
Hitchcock, F. C. ....	'96	Johnston, J. J. ....	'77
Hitchcock, J. E. ....	'91	Jones, A. A. ....	'82
Hoehn, J. ....	'82	Jones, G. (Mrs. Cuscaden) ....	'74
Hoffman, A. G. ....	'84	Jones, J. H. ....	'94
Hoge, W. B. ....	'84	Jones, J. R. ....	'90
Hogrefe, L. T. W. ....	'97	Jones, M. A. ....	'87
Hollan, L. H. ....	'69	Josenhans, R. J. C. ....	'82
Hollis, C. W. ....	'90	Judson, F. E. ....	'80
Holloway, W. J. ....	'76	Judy, John N. ....	'95
Holthoeffer, H. J. ....	'83	Kahn, Harry ....	'91
Hood, C. H. ....	'69	Kebler, L. F. ....	'90
Hopper, A. G. ....	'84	Keith, F. R. ....	'89
Hopper, C. H. ....	'75	Kelly, J. P. ....	'79
Horine, D. P. ....	'88	Kelly, M. C. ....	'71
Horton, C. R. ....	'96	Kelly, Wm. A. ....	'92
Hosack, H. E. ....	'83	Kennedy, E. J. ....	'82
Houghton, P. S. ....	'79	Kennedy, E. M. ....	'91
Houghton, E. M. .... (p. 34)	'93	Kerley, A. P. ....	'77
Howell, C. C. ....	'70	Kidder, S., Jr. ....	'88
Hower, Phil. G. ....	'92	King, Joseph C. ....	'91
Hubbard, F. J. ....	'77	Kirby, M. S. ....	'90
Hubbard, J. L. .... (p. 34)	'91	Kirby, T. E. ....	'90
Hubbard, T. H. ....	'82	Kirchgessner, W. C. ....	'89
Huber, L. H. ....	'90	Kirchmaier, G. A. ....	'83
Hudson, C. H. ....	'84	Kirk, D. ....	'77
Hudson, H. H. ....	'94	Klein, J. M. ....	'92
Hueber, C. F. .... (p. 34)	'84	Klingmann, T. ....	'90
Huested, F. P. ....	'91	Knapp, E. L. ....	'95
Huhn, C. H. ....	'81	Knapp, L. B. ....	'81
Humiston, K. P. ....	'77	Knapp, V. ....	'77
Huntington, H. N. ....	'74	Knox, S. R. ....	'94
Huntsman, A. ....	'74	Knox, J. W. T. ....	'95
Ilhardt, W. ....	'90	Koehnle, O. H. ....	'78
Irwin, J. L. ....	'80	Koon, C. S. ....	'83
Jackman, W. F. .... (p. 34)	'87	Koons, C. W. ....	'79
Jackson, C. E. ....	'93	Kramer, L. G. ....	'89
Jackson, G. R. ....	'92	Kremers, Wm. ....	'98
James, H. F. ....	'76	Krause, B. S. ....	'87
		Krug, W. H. ....	'89



Kuhlman, E.	'74	Mehlhop, F. W.	'89
Lake, C. N. (p. 34)	'84	Meinert, G.	'86
Landers, A. E.	'92	Melcher, A. B.	'85
Lauer, B. J.	'85	Melville, J. E.	'85
Leamon, G. P.	'84	Meredith, E. E.	'82
Ledman, O. S.	'83	Merkel, C. W. (p. 35)	'93
LeFevre, E. L.	'83	Merell, A. F.	'71
Leisenring, W.	'87	Merell, O. A.	'70
Leist, J. L.	'75	Merrett, F. D.	'80
Levy, H.	'88	Messenger, G. W.	'95
Levy, M. M.	'90	Meyer, T. F. (p. 35)	'87
Lewis, D.	'77	Meyer, O. P. (p. 35)	'90
Lilly, E. A.	'80	Miller, E. R. (p. 35)	'92
Little, J. R.	'76	Miller, T. W.	'86
Lobb, A. S.	'77	Miller, J. J.	'78
Lockwood, W. S.	'89	Milner, T. J.	'90
Logan, R.	'77	Miner, M. A. (p. 35)	'71
Lohman, G. H.	'70	Mills, C. W.	'70
Lohrstorfer, Joseph	'92	Mitchell, A. S. (p. 35)	'87
Long, W. L.	'77	Moody, L. W.	'78
Longstaff, C. H.	'82	Moore, S. S.	'71
Longwell, E. B.	'82	Moore, L. G.	'69
Lonstorf, G. J.	'80	Morgan, J. W.	'76
Loomis, J. H.	'81	Morris, G. A. (p. 35)	'93
Loudenbeck, H. C.	'91	Morris, J. E.	'82
Lovin, C. C.	'81	Morse, E. H.	'81
Lupinski, H.	'78	Moss, J. C.	'75
Lutes, J. W.	'97	Moss, J. R.	'70
Lynn, J.	'76	Muir, J. D.	'84
Maas, F. N.	'80	Mull, R. F.	'79
Mallett, Elgin	'95	Mummery, A. E.	'85
Maltbie, W. F.	'65	Murdock, T. E. (p. 35)	'94
Mann, A.	'80	Murray, B. L. (p. 35)	'91
Marsh, Fay N.	'95	Neal, J. C.	'69
Marshall, E. H.	'87	Newman, I. N.	'70
Marshall, E. S.	'80	Newton, W. B.	'93
Martzloff, C. E.	'90	Newton, W. F.	'70
Massey, F. W. H.	'76	Nichols, Clara Ella	'97
Massey, S. F.	'71	Nichols, M. F. (p. 35)	'94
Maxwell, J. C.	'94	Nickerson, F. H.	'93
McCarthy, R. H.	'73	Niermann, H. G.	'90
McCrilles, J. E.	'85	Nisbet, R. J.	'96
McCrea, H. F.	'81	Nivling, W. A.	'97
McCullough, R. S.	'80	Noll, W. H.	'97
McGee, T. H.	'91	Noll, M.	'81
McGregor, J. C.	'94	North, S. J.	'85
McGuire, B. J.	'90	Oaks, J. F.	'69
McKimmie, W.	'70	Obermann, R. F.	'83
McNeil, M. (Mrs. J. O. Reed)	'82	O'Connor, Delia	'94
McNoah, Grace E.	'94	Oechsler, A.	'88
Mead, A. H.	'94	Oles, F. R.	'82

Orth, L. P. ....	'79	Richter, Sara Esther .....	'97
Osborne, D. E. ....	'79	Riebe C. ....	'84
Ostrander, E. J. F. ....	'96	Rieger, C. F. ....	'83
Ostrander, R. H. ....	'83	Risser, E. J. ....	'76
Palmer, G. H. M. ....	'82	Robertson, F. L. ....	'94
Palmer, W. ....	'90	Robinson T. E. ....	'92
Palmer, H. ....	'85	Rockwell, M. ....	'89
Parker, A. S. .... (p. 35)	'79	Rockwell, O. M. ....	'82
Parker, C. E. ....	'85	Rodi, C. H. ....	'80
Parker, F. C. ....	'81	Roe, J. O. ....	'70
Parker, R. J. .... (p. 35)	'85	Rogers, A. S. ....	'85
Parkill, S. E. ....	'77	Romans, E. J. ....	'83
Parrott, B. E. ....	'81	Romig, S. V. ....	'70
Parsons, C. W. ....	'81	Rood, G. W. ....	'81
Parsons, H. B. ....	'76	Roos, C. L. ....	'83
Parsons J. H. ....	'92	Rouse, W. H. ....	'69
Passolt, H. A. ....	'88	Rowland, C. W. ....	'89
Parkinson, F. E. ....	'89	Royer, T. ....	'82
Pattison, G. H. .... (p. 35)	'92	Roys, H. M. ....	'76
Payne, C. E. ....	'80	Ruddiman, E. A. .... (p. 35)	'86
Pease, T. D. ....	'84	Rudolph, Karl E. ....	'93
Peck, F. J. .... (p. 35)	'91	Runyan, E. G. ....	'86
Pengra, C. P. ....	'83	Ruse, A. E. ....	'88
Pennington, J. E. ....	'88	Russell, D. M. .... (p. 36)	'91
Perry, F. W. R. ....	'80	Rutan, J. A. ....	'69
Pett, W. F. ....	'85	Sadler, A. ....	'69
Peyton, C. S. ....	'84	Salls, J. H. ....	'75
Phillips, D. A. ....	'71	Sanders, I. ....	'96
Pierce, Bessie G. ....	'93	Sandford, W. E. ....	'92
Pierron, J. J. ....	'76	Scherer, O. ....	'86
Post, M. E. ....	'77	Scherer, William .... (p. 36)	'93
Powell, J. Z. ....	'71	Shettler, G. M. ....	'89
Prentice, F. F. ....	'72	Schaupner, Phillip ....	'98
Pryer, C. E. (Mrs. Bartlett), ..	'82	Scheuerman, W. M. ....	'90
Pugh, F. B. ....	'74	Schiller, Edgar ....	'98
Purtscher, C. ....	'90	Schlotterbeck, J. O. ....	'87
Pusch, O. C. ....	'92	Schmid, O. F. ....	'90
Quayle, W. T. ....	'81	Schmidt S. ....	'81
Ranke, W. F., Jr., ....	'85	Schmidt, H. P. ....	'98
Ransom, R. B. ....	'82	Schmidt, L. W. ....	'83
Raynale, F. B. ....	'88	Schmidt, S. ....	'81
Reed, E. M. ....	'77	Schmidt, W. K. ....	'91
Reese, E. G. ....	'95	Schmitt, E. L. ....	'96
Reeve, J. C. ....	'80	Schott, A. A. ....	'84
Reppert, F. ....	'72	Schrage, W. ....	'74
Reule, G. A. ....	'87	Schumacher, A. C. ....	'84
Rex, R. G. ....	'69	Seiffardt, L. E. ....	'78
Reyer, T. ....	'81	Seltzer, L. A. .... (p. 36)	'92
Rice, E. F. ....	'85	Senier, A. ....	'74
Rice, S. ....	'73	Service, Caroline B. ....	'98
Rich, S. Agnes ....	'97	Sexton, W. A. ....	'81

Seymour, James.....	'94	Stoddard, Harry Schellhaus.....	'97
Shafer, C. M.....	'83	Stone, C. G.....	'77
Shanafelt, F. P.....	'83	Sturgis, Amos Dorwin.....	'97
Shaper, J. H.....	'88	Styles, M. D.....	'71
Sheedy, J. T.....	'92	Sutton, John B.....	'92
Sheffield, W. C.....	'76	Taber, H. E.....	'98
Shepard, O. E.....	'74	Taber, R. B.....	'96
Shepard, F. I..... (p. 36)	'91	Taylor, H. W.....	'96
Sherrard, C. C.....	'90	Taylor, W.....	'70
Short, Leonard.....	'98	Teeter, C. W.....	'80
Shubel, C. G.....	'87	Teeters, W. J.....	'95
Shuler, D. P.....	'87	Tegarden, J. L.....	'94
Smith, A. W.....	'85	Textor, O.....	'81
Smith, A. D.....	'78	Thayer, H. A.....	'90
Smith, C.....	'84	Thompson, C. W.....	'81
Smith, Carl E.....	'93	Thompson, F. A..... (p. 36)	'81
Smith, E. D.....	'86	Thompson, J.....	'89
Smith, Henry F.....	'91	Thompson, M. S.....	'86
Smith, H. T.....	'96	Thornburgh, T. R.....	'82
Smith, J. H.....	'77	Thum, F.....	'80
Smith, Marie R..... (p. 36)	'88	Thum, H.....	'78
Smith, O. J.....	'89	Tibbals, W. J..... (p. 36)	'90
Smith, S. W.....	'76	Todd, A. H.....	'80
Snow, Henry P.....	'91	Thompkins, J. W.....	'77
Snow, H. W..... (p. 36)	'84	Topping, C. O.....	'94
Soetje, E.....	'88	Topping, G. B.....	'87
Soetje, O. H.....	'92	Townsend, P. L.....	'78
Soyer, G. P.....	'83	Travis, F. A.....	'84
Spencer, E.....	'78	Tremain, H. A.....	'75
Spencer, H. H.....	'85	Trowbridge, Miles L.....	'96
Spencer, J. I.....	'83	Trowbridge, Milton L.....	'96
Spenger, L. J.....	'89	Tupper, E. A.....	'85
Stabler, L. J.....	'85	Turner, D. D.....	'81
Staehle, W. C.....	'75	Turner, G.....	'83
Standart, C. J.....	'87	Upjohn, A. (Mrs. Campbell).....	'71
Stanton, E. M.....	'69	Upjohn, M. (Mrs. Sidman).....	'71
Stecher, H. W.....	'78	Van den Belt, N.....	'82
Stephenson, A. C.....	'73	Vandivert, A. H.....	'79
Steiner, S. G.....	'84	Van Etta, H. S.....	'86
Steincamp, C. H.....	'95	Van Schoonhoven, G. G.....	'91
Stevens, A. B.....	'75	Van Zwaluwenburg, A.....	'87
Stevens, Alice M.....	'97	Varnum, E. C.....	'83
Stevens, J. C.....	'83	Vedder, F. F.....	'86
Stevens, M. B.....	'70	Vogel, A. F.....	'89
Stevens, R. H.....	'77	Von Walhausen, C. A. F.....	'96
Stevenson, W. E.....	'84	Waggoner, A. T..... (p. 36)	'84
Stevenson, G. C.....	'96	Wagner, Charles Linden.....	'97
Stewart, T. M.....	'74	Wagner, George.....	'93
Stinson, E. L.....	'82	Wait, C. (Mrs. Culver) (p. 36)	'90
Stivers, E. S.....	'86	Walker, A. L.....	'79
St. John, W. I.....	'84	Wallace, R. H.....	'78

Ware, E. J. ....	'88	Wilhite, E. L. ....	'84
Ward, R. M. ....	'81	Williams, C. H. ....	'94
Warner, George J. ....	'92	Williams, E. B. ....	'96
Warren, W. McK. ....	'87	Williams, S. W. ....	'81
Washburn, E. E. ....	'95	Wilmarth, G. E. ....	'75
Washburn, John L. ....	'95	Wilson, F. H. ....	'96
Waterman, C. N. .... (p. 36)	'88	Wilson, F. L. ....	'79
Waters, H. H. ....	'95	Wilson, G. E. ....	'78
Watkins, C. F. ....	'98	Wilson, O. L. ....	'81
Watson, C. M. ....	'76	Wilson, W. M. ....	'71
Watson, J. B. ....	'80	Wilson, Wm., Jr., ....	'98
Weaver, C. A. ....	'96	Wise, C. H. ....	'90
Weaver, J. ....	'74	Wise, P. E. ....	'94
Weeks, E. J. .... (p. 36)	'70	Wiseman, F. D. ....	'88
Wehrli, A. C. ....	'79	Wolcott, W. A. ....	'70
Weightman, M. ....	'89	Wolf, F. C. ....	'80
Wells, Joseph J. ....	'92	Wood, C. ....	'75
Wells, W. H. ....	'75	Wood, H. R. ....	'90
Wertz, S. G. ....	'93	Wood, J. B. ....	'89
Wesener, J. A. ....	'88	Wood, L. N. ....	'79
Westfall, D. M. ....	'99	Worden, C. E. ....	'78
Wetzel, R. M. ....	'84	Worden, E. C. ....	'96
Wheeler, A. M. ....	'81	Wrampelmeier, T. J. .... (p. 36)	'78
Wheelock, W. C. ....	'89	Wurmb, T. H. ....	'81
Whinery, J. B. ....	'88	Wykoff, W. C. ....	'84
White, B. W. (Mrs. W. Hager)	'83	Wyman, H. S. ....	'77
White, W. H. ....	'82	Young, A. V. E. ....	'75
Whitman, A. C. ....	'75	Young, A. L. ....	'77
Whitney, J. W. ....	'91	Young, R. D. .... (p. 36)	'90
Whitlark, W. J. ....	'76	Zeig, A. C. ....	'89
Wickwire, F. ....	'82	Zerse, O. G. ....	'82
Wilbur, T. S. ....	'73	Zimmerman, S. H. ....	'98
Wilder, G. P. ....	'96	Zwick, K. G. ....	'88
Wiley, C. D. ....	'87		

UNIVERSITY OF MICHIGAN

SCHOOL OF PHARMACY



*Announcement for 1900-1901.*

*Register of Alumni for 1869-1900.*

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ANN ARBOR, MICH.:  
PUBLISHED BY THE UNIVERSITY  
1900

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**Ann Arbor: Courier Office, Printers and Binders**

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## THE UNIVERSITY AND THE STATE.

THE University of Michigan is a part of the public educational system of the State. The governing body of the institution is a Board of Regents, elected by popular vote for terms of eight years, as provided in the Constitution of the State. In accordance with the law of the State, the University aims to complete and crown the work that is begun in the public schools, by furnishing ample facilities for liberal education in literature, science, and the arts, and for thorough professional study of engineering, medicine, pharmacy, law, and dentistry. Through the aid that has been received from the United States and from the State, it is enabled to offer its privileges with only moderate charges, to all persons who are qualified for admission. While Michigan has endowed her University primarily for the higher education of her own sons and daughters, it must be understood that she also opens the doors of the institution to all students, wherever their homes. It is in this broad, generous, and hospitable spirit, that the University has been founded, and that it endeavors to do its work.

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### THE BOARD OF REGENTS.

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SUPERINTENDENT OF PUBLIC INSTRUCTION.

## ORGANIZATION OF THE UNIVERSITY.

The University comprises the Department of Literature, Science, and the Arts, (including the Graduate School and the Summer School), the Department of Engineering, the Department of Medicine and Surgery, the Department of Law, the School of Pharmacy, the Homœopathic Medical College, and the College of Dental Surgery. Each Department, school, and college, has its special Faculty. The University Senate is a body representing all the faculties, and considers questions of common interest and importance.

In the Department of Literature, Science, and the Arts, different lines of study lead to the degrees of Bachelor of Arts, Bachelor of Philosophy, Bachelor of Science, Bachelor of Letters, the corresponding Masters' degrees, and the degrees of Doctor of Philosophy and Doctor of Science.

In the professional schools degrees are given as follows: In the Department of Engineering, the Degrees of Bachelor of Science, Master of Science, Civil Engineer, Mechanical Engineer, and Electrical Engineer; in the Department of Medicine and Surgery, the degree of Doctor of Medicine; in the Department of Law, the degrees of Bachelor of Laws and Master of Laws; in the School of Pharmacy, the degrees of Pharmaceutical Chemist, Bachelor of Science, and Master of Science; in the Homœopathic Medical College, the degree of Doctor of Medicine; in the College of Dental Surgery, the degrees of Doctor of Dental Surgery and Doctor of Dental Science.

Students in any department of the University may enter the classes in any other department, upon obtaining permission from the faculties of the respective departments.

### **The School of Pharmacy.**

This Department of the University is organized to give professional training for all branches of pharmacy and for related chemical pursuits. Students registered in this School are responsible to the Faculty of Pharmacy. Its administration is in the chemical building.

### **The Chemical Laboratory.**

Students of all Departments of the University, responsible to its several Faculties, receive such instruction as they require upon chemical subjects in the laboratories and lectures of the different branches of chemistry, conducted together in the chemical building.



## FACULTY.

JAMES B. ANGELL, LL.D., PRESIDENT.

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ALBERT B. PRESCOTT, M.D., LL.D., DEAN.

ALVISO B. STEVENS, PH.C., SECRETARY.

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PAUL C. FREER, PH.D., M.D.

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### **Analytical Chemistry:**

OTIS C. JOHNSON, A.M., PH.C.

EDWARD D. CAMPBELL, B.S.

EUGENE C. SULLIVAN, PH.D.

### **Mineralogy:**

WILLIAM H. PETTEE, A.M.

### **Organic Chemistry:**

ALBERT B. PRESCOTT, M.D., LL.D.

MOSES GOMBERG, Sc.D.

PERRY F. TROWBRIDGE, PH.B.

### **Botany, Pharmacognosy, Materia Medica:**

JULIUS O. SCHLOTTERBECK, PH.C., B.S., PH.D.

BERT K. VAN NATEN, M.D.

### **Pharmacy and Prescriptions:**

ALVISO B. STEVENS, PH.C.

### **Pharmacology, Physiology, Bacteriology.**

THE FACULTY OF MEDICINE AND SURGERY.

### **Mathematics, Physics, Languages:**

THE FACULTY OF LITERATURE AND SCIENCE.

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ASSISTANTS TO THE FACULTY (1899-1900).

**Pharmaceutical Preparations:** GEORGE M. HEATH, PH.C.

**Quantitative Analysis:** FRED L. WOODS.

**General Chemistry:** ALPHONSO M. CLOVER, B.S.

**Research:** HARRY M. GORDIN, PH.D.

**Research:** PAUL MURRILL, PH.D.

## CALENDAR OF THE COLLEGE YEAR.

### 1900.

- September 20-22. *Examination for Admission.*  
September 22-24. *Registration of Students* having admission upon  
Diploma.  
September 25. **FIRST SEMESTER BEGINS.**  
November —. Thanksgiving recess of three days.  
December 21. (Evening.) Holiday Vacation begins.

### 1901.

- January 8. Exercises resumed.  
February 8. (Evening.) **FIRST SEMESTER CLOSES.**  
February 11. **SECOND SEMESTER BEGINS.**  
April 12. (Evening.) Recess begins, ending April 23. (Evening).  
June 20. **COMMENCEMENT IN ALL THE DEPARTMENTS OF THE UNIVERSITY.**

The school year extends from the Tuesday preceding the last Wednesday in September to the Thursday preceding the last Wednesday in June. Admission may be obtained at the beginning of the second semester, February 11, 1900. For the full regular work admission cannot be granted at any other time than at the opening of the first or second semester, as students are instructed in classes in progressive order.

### References.

For the Conditions of Admission, see pages 7 to 11.  
For Laboratory Studies and Lectures, pages 11 to 18.  
The Order of Studies in the Two Years' Course, page 19.  
The Order of Studies in the Four Years' Course, page 20.  
Courses in Selected Studies, page 21.  
Lectures on Chosen Subjects, page 18.  
Graduate Year in Pharmacology, page 18.  
Studies in Research, page 19.  
Requirements for Graduation, page 22.  
Fees and Expenses, page 25.  
Register of Alumni, page 29.

## EDUCATION FOR PHARMACY.

As a pursuit pharmacy has three branches, namely: dispensing practice, the wholesale and foreign trade, and pharmaceutical manufacture. These branches, with much in common, rest alike upon the modern sciences, as well as upon commercial economics. In each branch there is a great deal of work that can only be done by persons of due scientific training. This training includes laboratory work with lecture-room studies in chemistry, general, analytical and organic, in pharmacognosy and cognate subjects, with the technics of pharmacy, as set forth in the pages following, all with adaptation to a distinct profession having its own experience and its own literature in all parts of the educated world. Besides this general groundwork of pharmacy at large, to provide for the larger demand in the main branches of pharmacy, this school gives training for specialists in this profession. This is done to meet the call for experts of higher skill, in subjects such as analytical chemistry, pharmacology, bacteriology, physiological chemistry, and pharmacognosy. Through all these courses, both general and special, the aims of pharmaceutical practice are kept in view, mercantile economics are regarded, and professional spirit sustained.

The opportunities for persons of training in pharmacy, in previous years, are shown by the professional Register of the Graduates of this school, published in this issue. At present greater opportunities appear by reason of increased specialization, more calls for experts, and the impulse given to both home and foreign drug trade by the activity in the new possessions of the United States.

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## REQUIREMENTS FOR ADMISSION.

[For admission to advanced standing, see page 10.]

[For admission of students not candidates for a degree, see page 10.]

The requirements for admission vary in stated particulars with the applicant's previous training in practical pharmacy, and with the course

of study he intends to pursue. Two courses are offered: a two-year course, leading to the degree of Pharmaceutical Chemist; and a four-year course, leading to the degree of Bachelor of Science in Pharmacy. The requirements are described below in two divisions, according to the degree which the student desires to take.

### **The Degree of Pharmaceutical Chemist.**

Applicants for admission to the two-year course, leading to the degree of Pharmaceutical Chemist, must be at least eighteen years of age.

It will be of advantage to the applicant to obtain at least a year of practical training in a drug store before entering the School. The required work leaves the student no time for an engagement in a drug store during the school year.

#### **ADMISSION WITHOUT EXAMINATION.**

**From High Schools.**—Applicants holding diplomas of graduation from any of the full courses of the schools approved by the Faculty of the Department of Literature, Science, and the Arts, are admitted without examination, as are, also, graduates of four year courses of other high schools of good standing.

**From Colleges.**—Students who have completed at least one year's work in an approved college of literature and science, and who bring explicit and official certificates describing their course of study and scholarship and testifying to their good character, are admitted without examination. Graduates of creditable colleges of medicine or of pharmacy are also admitted without examination.

#### **ADMISSION ON EXAMINATION.**

Applicants who bring evidence of HAVING BEEN ENGAGED IN THE PRACTICE OF PHARMACY for at least two years are admitted on examination in the following branches:

**English.**—Exercises in the writing of English with correctness. Especial regard is paid to orthography, punctuation, the use of capitals, grammatical construction, and rhetorical fitness.

**Mathematics.**—*Arithmetic.*—Including Proportion, Involution and Evolution, and the Metric System. *Algebra.*—To include Equations of the First Degree containing two or more unknown quantities.

**Physics.**—Carhart and Chute's Physics or an equivalent.

**Chemistry.**—The high school preparation should include a year in chemistry, in which laboratory work is advised.

**Latin or German.**—To the extent of one year's study in an approved high school.

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## EXPLANATION.

*A student applying for admission to the School of Pharmacy of the University of Michigan should have this form filled out and signed by the principal or superintendent of the school which he has attended. This form should be sent to Prof. A. B. Prescott, or Prof. A. B. Stevens, Ann Arbor, Mich. It will be subjected to examination and the result will be endorsed on the form, and the applicant will be informed of the conditions under which he will be admitted.*

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OTHER APPLICANTS ARE EXAMINED IN THE FOLLOWING BRANCHES:

**English.**—The same as given above.

**Mathematics.**—*Arithmetic and Algebra.*—The same as given above.  
*Geometry.*—The Elements of Plane Geometry.

**Latin or German.**—The applicant may offer (1) three years of preparation in Latin; or (2) two years in Latin and one year in German; or (3) one year in Latin and two years in German.

**Physics.**—Carhart and Chute's Elements of Physics, or an equivalent.

**Chemistry.**—The same as given above.

**Botany.**—Laboratory work for half a year with occasional recitations and review exercises.

### The Degree of Bachelor of Science in Pharmacy.

The requirements for admission to the four-year course, leading to the degree of Bachelor of Science in Pharmacy, are and will be in every respect, whether on diploma or by examination, the same as the requirements for admission to the Department of Literature, Science, and the Arts, in the groups which fit students for pursuing the University studies required of candidates for the degree of Bachelor of Science. Of the four groups of requirements described on pages 45 to 51 of the University Calendar for 1899-1900, Group III or Group IV gives suitable preparation for work leading to the degree of Bachelor of Science in Pharmacy; but persons who have completed the requirements of Group I or Group II will be admitted to the School on condition of making up the requirement in chemistry included in Group III.

The requirements for admission formulated below have been adopted to go into effect at once. Until the close of the college year 1900-1901, students may, however, enter either under these requirements or under those published in the Calendar of 1899-1900. After the latter date the requirements below given will alone be in force. Fifteen units are required for admission. A unit means one subject pursued for not less than four periods a week throughout a school year. The following subjects must be presented by all candidates: English, 3 units; Mathematics (Algebra and Geometry), 3 units; Physics, 1 unit. In addition to these required subjects eight units must be presented selected from the following list. These eight units must include two units of either Latin, French or German. The annexed figures indicate the number of units which may be offered in each subject: Greek, 2; Latin, 2 or 4; French, 2 or 4; German, 2 or 4; English Literature, 1; History, 1, 2 or 3; Chemistry, 1; Botany, 1; Zoology, 1; Biology (half a year each of Botany and of Zoology), 1; Physiography, 1. Since Biology is made up of Botany and Zoology, it may not be counted by candidates who count either or both of those subjects.

### **Admission to Advanced Standing.**

Students who have gained admission to the School may apply for credit in any of the college studies which they have pursued in another college or in a high school whose graduates are admitted. Such application should be made to the Dean at the time of entering the School, and may be referred to the professor in charge of the studies in which credit is asked. He may appoint a time for examination of the applicant upon the study. Applicants are desired to bring explicit credentials as to the work done. Credits from other Schools of Pharmacy are adjusted separately for each study, as stated above. Owing to differences in the order and extent of the studies, credits cannot be counted in years of pharmaceutical college study. Applicants by correspondence, before the opening of college, may have their credentials acted upon for advanced standing.

Credits are received from the other departments, and from the Summer Session, of this University.

### **Admission of Students Not Candidates for a Degree.**

Persons over nineteen years of age who bring evidence of having been engaged in the practice of pharmacy for at least two years, may be admitted to pursue selected studies upon passing the admission requirement in English described on page 8 of this Announcement. The same privilege is accorded to persons over twenty-one years of age who are able to study with advantage in the School, the same examination being required as to the correctness of English writing.

Students admitted under the above provisions are not regarded as candidates for any degree, and they do not become eligible for graduation until they have passed all the examinations for admission to the course leading to the degree which they seek to obtain. To become eligible for graduation with the degree of Pharmaceutical Chemist, the student must at least pass the examination for admission required of those who have been engaged in the practice of pharmacy. To become eligible for graduation with the degree of Bachelor of Science, the student must meet the full entrance requirements of the course leading to that degree.

Students not candidates for a degree may select such studies as they are found prepared to pursue, under the regulations of the Faculty. Courses of selected studies are arranged for students, to suit their purposes and qualifications (see page 21). Selected studies may be continued so long as, in the judgment of the Faculty, they are carried with success and profit.



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### Time of Examination.

**For Admission to the Two-Year Course.**—An examination for admission will be held on Thursday and Friday, September 20 and 21, 1900, beginning at 9 A. M. on Thursday.

**For Admission to the Four-Year Course.**—The examination for admission will be held in connection with that of applicants for admission to the Department of Literature, Science, and the Arts (see the schedule of the hours of these examinations in the University Calendar for 1899-1900, p. 53.

### Election and Registration of Studies.

At the beginning of each semester, and not later than the first Saturday, it is necessary that each student should determine upon his studies for that period, and register them in due form, filling out the "election blank," of the School of Pharmacy, furnished at the office of the Secretary of the School.

In the course of two years the studies are mainly though not wholly the same for all students, and the order of succession of subjects is that given on page 19. When the student has opportunity of choice he should at once consult the officers of the School upon his election of studies. A succession of studies for four years is given on page 20.

### Studies Registered in Department of Literature.

Every student taking work in mathematics, physics, or languages must fill out the "election blank" of the Department of Literature. This requires the signature of the Dean of the School of Pharmacy, and must be deposited as the blank directs.

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## COURSES OF INSTRUCTION.

The courses of instruction comprise lectures, recitations and laboratory work. The amount of work in each course is expressed in hours, an "hour" signifying one exercise a week during one semester. A lecture or recitation is usually one hour in length. A laboratory exercise, employs three hours, more or less, being continued until the work assigned to one exercise, or a due portion of the work assigned to the course, has been completed. The satisfactory completion of one exercise a week during one semester, including a sufficient standing in the examination held at the end of the semester, entitles the student to one *hour*

*of credit* towards graduation. It is expected that a lecture or a recitation, with the personal study necessary to maintain the student's standing in the subject, will take in all as much time as a laboratory exercise. Therefore an *hour of credit* is regarded as having the same value whether obtained in a course of lectures or in a course of laboratory exercises.

### Pharmacy.

**COURSE A.**—*Theory and practice of Pharmacy.*—Five hours a week, Second semester. Lectures and Recitations. Professor STEVENS.

History of pharmacopœias and recitations from the U. S. Pharmacopœia. Specific gravity, weights and measures. Problems in parts by weight from chemical proportions, weights, volumes and percentages of strength. Application of heat for pharmaceutical uses. Solution, filtration, decantation, clarification, pulverization, granulation, crystallization, sublimation, percolation, distillation, dialysis, etc.

**COURSE B.**—*Operative Pharmacy and Pharmaceutical Preparations.*—Laboratory work daily and recitations three times a week, making *eight* hours of credit. First Semester. To be preceded by Course A in Analytical Chemistry, completed clear of conditions. Professor STEVENS.

The satisfactory production of about one hundred and fifty preparations, embracing the classes of the U. S. Pharmacopœia and National Formulary, galenicals,, scales, synthetic chemicals, etc. Critical application of the pharmacopœial tests. The daily laboratory exercise takes about four hours.

**COURSE C.**—*Pharmaceutical Technology and Prescription Practice.*—Four hours of credit. Second semester. Lectures and work at the Prescription Stand, the time taken in the prescription exercises being dependent upon the previous experience and the ability of the student. Professor STEVENS.

The technology of articles used in pharmacy. Commercial history, prevalent impurities, standards of purity and strength, official tests, technical and public uses.

The Art of Dispensing. Doses, medicinal and poisonous. *Fac simile* of prescriptions will be thrown upon the screen by the aid of a stereopticon, giving practice in the chirography of physicians, and criticism of quantities, doses, errors, incompatibilities and methods of compounding.

### Pharmacognosy.

MICRO-BOTANY, PHARMACOGNOSY, PHARMACOLOGY, THERAPEUTICS.

**COURSE A.**—*Micro-Botany.*—Five hours of credit. Second semester. Work in the botanical laboratory four times a week, two hours each time, and one lecture a week. Professor SCHLOTTERBECK.

Structural botany and the delineation of cell-structure, and cell contents, tissues and tissue systems. Wherever possible material for demonstration is selected from plants or parts of plants which find medicinal application. Minute histological study of important crude drugs, their substitutes and adulterants. Practical work in the microscopical examination of powder-drugs, foods and condiments, and the detection of adulterations. Reports upon commercial samples of the same obtained in open market and upon specially prepared unknown mixtures.

This course is concluded by original investigation upon important crude drugs. A set of representative permanent mounts is prepared by each student.

**COURSE C.—*Pharmacognosy*.—Three hours of credit, First Semester.** Professor SCHLOTTERBECK.

Lectures, demonstrations and recitations upon the botanical and geographical source, history, methods of cultivation, collection and preparation, and the active constituents of all important medicinal plants. Practical exercises in the ready recognition of the various articles discussed in the lectures. Studies in the botanical gardens.

**COURSE D.—*Materia Medica*.—Two hours a week, First Semester.** May be taken in the same semester as Course C. Lectures and Recitations. Dr. VAN NATEN.

Pharmacology, Therapeutics, Posology and Toxicology. The classification and history of medicines. Their physiological action, therapeutic applications, their preparations and doses. The symptoms of poisoning and the use of antidotes.

**COURSE E.—*Pharmacognosy*.—Two hours a week, Second Semester.** Continuation of Course C. Professor SCHLOTTERBECK.

**COURSE F.—*Materia Medica*.—Two hours a week, Second Semester.** May accompany Course E. Continuation of Course D. Dr. VAN NATEN.

### General Chemistry.

**COURSE 1.—*Elementary Inorganic Chemistry*, Descriptive and Experimental. Three hours of credit. (Advanced credit from high schools upon examination.) Second Semester.** Professor FREER.

**COURSE 2.—Laboratory work in General Inorganic Chemistry. Credit arranged with instructor.** Mr. LICHTY. This course must be preceded or accompanied by Course 1 or its equivalent.

**COURSE 5.—*Inorganic Chemistry, Descriptive and Experimental*.—Continuation of Course 1. Five hours of credit, Second Semester.** lectures and recitations. Dr. HULETT.

**COURSE A.—*Inorganic Chemistry, Descriptive and Experimental*.—Five hours of credit, lectures and quizzes five times a week, First Semester.** Professor FREER.

A beginning course extending further than Course 1.

COURSE 12.—*Physical Chemistry*.—Laboratory work ending in research. *Hours to be arranged*. Dr. BIGELOW.

Designed primarily for graduate students. Elective for undergraduates of sufficient preparation.

### **Analytical Chemistry.**

#### **QUALITATIVE ANALYSIS, QUANTITATIVE ANALYSIS, TECHNICAL ANALYSIS.**

COURSE 1.—*Qualitative Analysis*.—Laboratory work and recitations each five times a week, giving *ten hours* of credit. Either First or Second Semester. May be divided between the two semesters, as a five-hour course in each (Courses 3 and 3a). To be preceded or accompanied by a course in general chemistry, or by the study of chemistry with laboratory method in the high school. Professor JOHNSON and Dr. SULLIVAN.

The study of chemical change, in the reactions of metallic salts and other inorganic substances and as represented by equations. The comparison of solubilities, and the available means of separation. Methods of analysis and their relation to methods of synthesis. Reactions of oxidation and reduction. Analysis of mixtures.

COURSE 4.—*Quantitative Analysis*.—Laboratory work five times a week, and lecture-recitations twice a week, giving *seven hours* of credit. Either First or Second Semester. Must be preceded by Course 1, completed clear of conditions. Professor CAMPBELL.

The determination of specific gravities; volumetric estimations; gravimetric determinations and separations. The results to come within specified limits of recovery. The laboratory exercises take from three to four hours each.

*The following stated courses are designed for graduate students, or as elective specialties in the studies of four years for graduation.*

COURSE 2.—*Advanced Qualitative Analysis*.—Laboratory work three times a week and recitations twice a week, giving *five hours* of credit. Second Semester. May follow Course 1, of which it is a continuation. Professor JOHNSON.

COURSE 5.—*Advanced Quantitative Analysis*.—Laboratory work five times a week, a *five-hour* course. Either First or Second Semester. Must be preceded by Course 4, and requires special permission. Professor CAMPBELL.

COURSE 6.—*Iron and Steel Analysis*.—Laboratory work, a *five-hour* course. Either First or Second Semester. Open to those who have completed Course 4 and received special permission. Professor CAMPBELL.

**COURSE 8.—*Analysis of Minerals.***—Qualitative and quantitative laboratory work for *five hours* of credit. Either First or Second Semester. Must be preceded by Courses 1 and 4 and requires special permission. Professor CAMPBELL.

***Water Analysis.***—Laboratory work three times a week and reading, a course of *three hours* of credit. Mineral water analysis, and the chemical methods of sanitary water analysis. Either First or Second Semester. Must be preceded by Course 4, and requires special permission. Professor PRESCOTT and Mr. TROWBRIDGE.

SHORTER COURSES IN QUALITATIVE CHEMISTRY FOR STUDENTS NOT CANDIDATES FOR A DEGREE.

***Two Months' Course.—Qualitative Chemistry.***—Laboratory work and recitations, each five times a week. Each laboratory exercise takes three or four hours, the recitation one hour, both in the time from 1 to 5 P. M.

The notation of salts; solubilities as concerned in the inorganic reactions studied group by group; chemical equations in precipitation, solution, and gas generation; studies of chemical change resulting in "*incompatibilities.*" A limited number of "unknowns" in actual analysis, not earlier than the last month of the course. The purpose of the course is an acquaintance with chemical change, rather than qualification as an analyst, the course being too brief for the latter.

**COURSE 3.—*First Steps in Qualitative Analysis.***—Laboratory work three times a week, recitations twice a week. First or Second Semester. Professor JOHNSON. This course constitutes about one-half of Course 1 in Analytical Chemistry. It gives more analytical work than the two months' course.

**Organic Chemistry.**

INCLUDING ANALYTICAL AND APPLIED ORGANIC CHEMISTRY.

**COURSE 10.—*Carbon Compounds.***—*Five hours* of credit. First semester. To be preceded by a course in General Chemistry, and one in Analytical Chemistry. Lectures. Professor PRESCOTT.

With an introduction to the use of the literature in the library. With each lecture there is a short colloquium, and a brief essay written and read by a member of the class.

**COURSE 12.—*Organic Preparations.***—*Three to five hours* of credit. Either First or Second Semester. May accompany or follow Course 10. Laboratory work in organic synthesis. Professor GOMBERG.

This course is continued in work designed primarily for graduate students.

**COURSE 14.—*Organic Analysis, and Drug Assaying.***—*Seven hours* of credit. Second Semester. To be preceded by Course 10 and by a

course in quantitative analysis (Course 4 of Analytical Chemistry). Laboratory work with Lectures. Mr. TROWBRIDGE.

Qualitative and quantitative analysis for alkaloids, and certain other representative carbon compounds, drug assaying, the outlines of fat analysis. With sub-courses in technical organic analysis, adapted to the purposes of the student.

*Sanitary and Commercial Organic Analysis.*—Five hours of credit. First or Second Semester. Continuation of Course 14. Laboratory work and reading. May be devoted to Food Analysis or to some branch of commercial analysis, such as that of Nostrums on the Market, or that of Paint Materials. Professor PRESCOTT and Mr. TROWBRIDGE.

*Toxicology.*—Inorganic and Organic. Chemical and microscopical. Three hours of credit. Either First or Second Semester. Must be preceded by Course 14 and the pre-requisites of that course. Laboratory work and reading. Professor PRESCOTT and Mr. TROWBRIDGE.

#### BEGINNING COURSES IN ORGANIC CHEMISTRY IN SECOND SEMESTER.

Obtained only by permission. Given primarily for classes in other Departments of the University. Candidates for a degree begin the subject with Course 10 and do not require these courses.

*Lectures on Organic Chemistry* three times a week.—Two hours of credit. Professor GOMBERG.

COURSE 28.—*Lectures on Organic Chemistry* five times a week.—Four hours of credit. Professor PRESCOTT.

#### Physiological Chemistry and Bacteriology.

*Physiological Analysis.*—A course of four hours of credit obtained in two months. Must be preceded by courses in qualitative analysis, quantitative analysis, and organic chemistry. Laboratory work five times a week, and lectures three times a week,—all between 1 and 5 P. M. Professor NOVY.

The chemistry of normal and abnormal urines; the chemistry of the liquids of the stomach; the chemistry of the blood, etc.

*Physiological Chemistry.*—Course 7.—Seven hours of credit. A continuation of the course last above given and including the same, at the same hours, for one semester. Professor NOVY.

*Bacteriology.*—Four hours of credit. Laboratory work daily for two months. Advanced courses of an extent that may be arranged by the professor in charge. Professor NOVY.

*Lectures on Bacteriology.*—Three hours of credit. In the first semester. Professor NOVY.

### Pharmacology.

*Special courses in advance of the required studies given on page 13, arranged for graduate students, and elective for undergraduates of sufficient preparation*

*Laboratory of Pharmacology.*—Three hours of credit. Laboratory work and reading. To be preceded by Course 10 in organic chemistry, and by a study of physiology. Professor CUSHNY.

The chief phenomena of the action of the more important drugs is elicited by the student himself on animals, and their bearing on practice shown. The class meets four days a week, during six weeks of the first semester. An advanced course is held in the second semester, when certain of the newest drugs are taken up and investigated thoroughly in order to show how such an investigation should be carried out. Professor CUSHNY.

*Lectures on Pharmacology.*—Three lectures and two demonstrations each week with five hours of credit, in both semesters. In the first part of the course, general pharmacology is taken up and the student is taught how far and in what direction the organism can be influenced by drugs. The second part of the course is devoted to special pharmacology. In this, the action of each drug on the normal tissues is considered separately. Professor CUSHNY.

*Physiology,*—four hours of credit in first semester, and four hours in the second semester. Lectures. Must be preceded by a course in organic chemistry. It is also desirable that the student have had studies in anatomy. Professor LOMBARD.

### Mineralogy.

**COURSE A.**—*Crystallography.*—Twelve lectures supplemented by practical exercises. In First Semester, beginning on a date to be announced. Professor PETTEE.

**COURSE 1.**—*Mineralogy.*—Two hours of credit. Includes Course A. Either First or Second Semester. To be preceded by a course in general chemistry. Lectures and practice. Professor PETTEE.

**COURSE 2.**—*Mineralogy.*—Five hours of credit. Includes Course 1 as well as Course A. Second Semester. To be preceded by a course in general chemistry and a course in analytical chemistry. Lectures and practice. Professor PETTEE.

### Physics.

**COURSE 1.**—*Five hours.*—Second Semester. Open to those who have had the B.S. entrance examination in physics, and to all others who have had sufficient preparation. A knowledge of plane trigonometry is

indispensible. Mechanics, Sound and Light. Lectures. Professor REED.

**COURSE 2.—Five hours.**—First Semester. Must be preceded by Course 1 in physics and by a course in general or analytical chemistry. Electricity, Magnetism, and Heat. Lectures. Professor CARHART.

### **Chosen Subjects.**

Lectures once a week, in the Second Semester. *One hour.* Special lecturers, resident and non-resident.

Pharmaceutical Economics; the avenues of the drug trade in the United States and her new possessions; sources of supply of raw and refined chemicals; drug plantations; the organizations of pharmacists, the literature of pharmacy, and any professional topic of the time.

### **A Graduate Year in Pharmacology, Bacteriology, and Physiological Chemistry.**

Graduates of this School are admitted to these studies, and upon completion of satisfactory work to the extent of a college year a formal certificate or diploma is granted by the Faculty. For an account of these subjects see previous pages.

#### **IN FIRST SEMESTER.**

##### **LABORATORY.**

*Pharmacology.*—Professor CUSHNY and Dr. VAN NATEN.

*Bacteriology.*—Professor NOVY.

##### **LECTURES.**

*Bacteriology.*—Professor NOVY—*four times a week.*

*Pharmacology.*—Professor CUSHNY—*five times a week.*

*Physiology.*—Professor LOMBARD—*four times a week.*

#### **IN SECOND SEMESTER.**

##### **LABORATORY.**

*Pharmacology.*—Professor CUSHNY and Dr. VAN NATEN.

*Physiological Chemistry.*—Professor NOVY and Mr. BLISS.

##### **LECTURES.**

*Physiological Chemistry.*—Professor VAUGHAN—*three times a week.*

*Pharmacology.*—Professor CUSHNY—*five times a week.*

*Physiology.*—Professor LOMBARD—*four times a week.*



### Research.

The work of a student who undertakes research is in charge of one or more of the professors, subject to the provisions of the Faculty. Under this direction any student suitably prepared by previous training, may enter upon an investigation. Facilities of laboratory and library for a special research may be granted to any competent person, registering as a student, whether the results are to be published or not. Holders of a Fellowship devote their time to experimental research with publication of the results. The opportunity of undergraduates in the research laboratories is usually confined to the last year of the four-years' course and the last semester of the two-years' course. Research is entitled to credit toward a degree in proportion to its extent and value.

### Fellowship and Grants for Research.

THE STEARNS FELLOWSHIP OF RESEARCH has been maintained since 1895 by means of gifts made by Messrs. Frederick Stearns & Company, of Detroit.

THE COMMITTEE OF REVISION OF THE PHARMACOPŒIA OF THE UNITED STATES, 1890-1900, has made grants for the support of special investigation in the laboratory of this School, under the direction of the Committee in prosecution of the Revision. Persons selected for this important service have been registered as graduate students and have devoted themselves entirely to the work of the research undertaken.

## SUCCESSION OF STUDIES.

### I. IN THE COURSE OF TWO YEARS.

The regular sequence of studies for the degree of Pharmaceutical Chemist, to be completed in four semesters, is given in the following table. The work can be entered upon at the beginning of the second semester, but in this case it is the more desirable to take five semesters for completion. A curriculum of studies for *five semesters*, or for *six semesters*, will be arranged by the Faculty to suit the individual purposes or needs of students.

#### FIRST YEAR: FIRST SEMESTER.

Hour.	Day.	Room.	Subject.	Instructors.
8	M, T, W, Th, F, A.		Qual. Anal., Sec. I.	JOHNSON.
			Sec. II.	SULLIVAN.
9	M, T, W, Th, F,	Med. Bld.	Gen. Chem.	FREER.

## SECOND YEAR: FIRST SEMESTER.

8	M, W,	Museum.	Mat. Med.	VAN NATEN.
8	T, Th,	Mus.	Pharmacognosy.	SCHLOTTERBECK.
9	M, W, F,	A.	Organic Chem.	PRESCOTT.
(To be announced.)		Tappan H.	Crystallography.	PETTEE.

## FIRST YEAR: SECOND SEMESTER.

8	M, T, W, Th, F,	B.	Pharmacy.	STEVENS.
9	T, Th,	B.	Quant. Anal.	CAMPBELL.
10-12	M, T, Th, F,	Bot. Lab.	Micro-Botany.	SCHLOTTERBECK.
10	W,	Mus.	" "	"
11	W,	A.	Chosen Subjects.	PRESCOTT.

## SECOND YEAR: SECOND SEMESTER.

8	W, F,	Mus.	Mat. Med.	VAN NATEN.
8	M, Th,	Mus.	Pharmacognosy.	SCHLOTTERBECK.
10	W, Th, F,	B.	Pharmacy.	STEVENS.
11	T, Th,	C.	Organ. Anal.	TROWBRIDGE.
11	W,	A.	Chosen Subjects.	PRESCOTT.

## II. IN THE COURSE OF FOUR YEARS.

Students who enter the School prepared in Latin, in German, and in chemistry, as high school studies, are advised to arrange their work in accordance with the scheme printed below. Students who enter with French instead of German, or without chemistry, are advised to follow the same scheme in general, with such modifications as may be necessary.

*First Year, First Semester.*—Mathematics 1a, three hours; French, four hours; German, two hours; General Chemistry 2, three hours, and 3, four hours.

*First Year, Second Semester.*—Mathematics 2a, four hours; Physics 1, five hours; Pharmacognosy A, five hours; German, two hours.

*Second Year, First Semester.*—Analytical Chemistry, ten hours; Pharmacognosy C, two hours; French, two hours; Mineralogy, two hours.

*Second Year, Second Semester.*—Analytical Chemistry 4, seven hours; Pharmacy A, three hours; Pharmacognosy E, two hours; General Chemistry 5, five hours.

*Third Year, First Semester.*—Pharmacy B, ten hours; Organic Chemistry 10, five hours.

*Third Year, Second Semester.*—Organic Chemistry 14, seven hours; Pharmacy C, four hours; English 1a, two hours; elective studies, not more than two hours.

*Fourth Year, First Semester.*—Pharmacognosy D, three hours; Phar-

macology laboratory, three hours, and lectures, five hours. Elective studies, and studies in research.

*Fourth Year, Second Semester.*—Pharmacognosy F, two hours; Electives and research.

### III. IN SELECTED STUDIES.

Students not expecting to graduate can enter for selected studies at the beginning of the First Semester, September 25, and at the beginning of the Second Semester, February 11. For pharmaceutical purposes, the student who is limited to one year's college work, can do well in taking the regular studies of the First Year in the Course of Two Years as stated on page 20.

Of the shorter courses usually most available for students having limited time in college, the following may be named:

Course A in Pharmacognosy. Second Semester (page 12).

Course C in Pharmacognosy. First Semester (page 13).

Course I in General Chemistry. First or Second Semester (page 13).

Course A in General Chemistry. First Semester (page 13).

Course in Qualitative Chemistry. Two months (page 15).

Course 28 in Organic Chemistry. Second Semester (page 16).

First Steps in Qualitative Analysis. Either Semester (page 15).

All the work of the School is open to students not candidates for a degree, so far as they are prepared to engage in it.

### IV. THE SUMMER SCHOOL.

The University of Michigan holds a Summer Session. In 1900 this session begins Monday, July 2, and continues for six weeks. Instruction is given, by a Faculty of thirty-nine persons, in many branches of science and literature. In connection with the work of the School of Pharmacy, courses in chemistry are given, general, analytical, organic, and physiological, in all twelve distinct courses. The tuition fee is fifteen dollars. An announcement will be sent on application to the University.

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### EXAMINATIONS.

The examination upon each Course of instruction is held at the time the work of that Course is completed. The examinations, therefore, are held at the end of each semester, in February and in June.

The result of an examination is reported by the Professor in charge, for each student enrolled, to the Faculty, in terms as follows:

*Passed.*—Entitling the student to full credit for the course.

**Conditioned.**—Imposing some specified condition, usually to take another examination, the condition to be fulfilled before credit can be given.

**Provisionally Passed.**—Withholding the credit for the course until the student shall have done better work in *other* studies, in the judgment of the Faculty as a whole, who can change the record of Provisionally Passed to a record of Passed, or Conditioned, or Not Passed, whenever such change shall be justified by the scholarship of the student in his several studies.

**Not Passed.**—Requiring the student to go over the regular exercises of the study again before he receives another examination.

**Absent.**—With statement of the cause of absence; if the student has left the class, stating at what time; or stating if absent without excuse or explanation.

### Requirements for Graduation.

[Experience in the business of pharmacy is not made a requirement for a degree.]

#### 1. *With the Degree of Pharmaceutical Chemist.*

[For requirements of college entrance, see page 8.]

##### FIRST YEAR, FIRST SEMESTER.

	Hours of Credit. *	Hours in Lect. & Rec.	Hours in Laboratory.
General Chemistry, Course A, . . . . .	5	90	
Analytical Chem., Course I, <i>Qual.</i> , . . . . .	10	90	360
Total for First Semester, . . . . .	15	180	360

##### FIRST YEAR, SECOND SEMESTER.

Pharmacy, Course A, . . . . .	5	90	
Pharmacognosy, Course A, <i>Micro-Botany</i> , . . . . .	5	18	144
Analytical Chem., Course B, <i>Quantitative</i> , . . . . .	7	36	360
Total for second semester, . . . . .	17	150	504

##### SECOND YEAR, FIRST SEMESTER.

Pharmacy, Course B, <i>Preparations</i> , . . . . .	8	72	360
Organic Chemistry, Course A, . . . . .	5	90	
Pharmacognosy, Course C, . . . . .	2	36	
Pharmacognosy, Course D, <i>Materia Medica</i> , . . . . .	2	36	
Mineralogy, Course A, <i>Crystallography</i> , . . . . .	1	6	12
Total for First Semester, . . . . .	18	240	372

\* "Hours of Credit" are the number of exercises *per week* for one semester. See page 11.

## SECOND YEAR SECOND SEMESTER,

Pharmacog., Course F, <i>Materia Medica</i> , . . .	2	36	
Organic Chem., Course 14, <i>Analysis</i> , . . .	7	36	360
Pharmacognosy, Course E, . . . . .	2	36	
Pharmacy, Course C, <i>with Prescrip. Practice</i> , . . .	4	72	36
Lectures on Chosen Subjects, . . . . .	1	18	
		<hr/>	<hr/>
Total for Second Semester, . . . . .	16	198	396
Totals of required work, . . . . .	66	768	1632
		<hr/>	<hr/>
Hours in laboratories and lectures, . . . .		2400	

2. *With the Degree of Bachelor of Science in Pharmacy.*

[For requirements of college entrance, see page 9.]

[For the advisory sequence of studies, see page 18.]

In English: Courses 1, 1a.

In German: (a) for those who entered *without* German, Courses 1, 2; or (b) for those who entered *with* German, four hours.In French: (a) for those who entered *without* French, Courses 1, 2, or an equivalent; or (b) for those who entered *with* French; four hours.

In Mathematics: Courses 1a, 2a.

In Physics: Course 1.

In General Chemistry: (a) for those who entered *without* Chemistry, Courses 1, 5; or (b) for those who entered *with* Chemistry, Course 5.

In Analytical Chemistry: Courses 1, 4.

In Organic Chemistry: Courses 1, 14.

In Mineralogy: Course 1.

In Pharmacognosy: Courses A, C, D, E.

In Pharmacy: Courses A, B, C.

From the other courses offered in the School, or in other departments of the University, the student must choose with the approval of the Faculty and complete enough including those above prescribed to make in all *one hundred and twenty* hours of credit.

3. *With the Degree of Master of Science.*

Graduates with the degree of Bachelor of Science, accepted as candidates for a higher degree, after at least a year of graduate study in three subjects, a major subject and two minors, may receive examinations for the degree of Master of Science, which is conferred in the School of Pharmacy.

**LIBRARY, BOOKS OF REFERENCE, AND TEXT-BOOKS.**

The School provides an extensive library, the main portion of which is shelved and indexed in the General Library Building of the University. The entrance to the library is within one hundred feet of the entrance to the main building of the school of Pharmacy. The Library is open to readers twelve and one-half hours daily, except Sundays and legal holidays, during the collegiate year, and six hours daily during the three months of the summer vacation.

The Library provides the complete sets of the journals, the original repositories of the sciences related to pharmacy, in all languages, as well as the current periodicals of the profession, encyclopædias and hand-books of chemistry and pharmacy, and the latest works of value in study. The works of reference in actual use in the School may be estimated at over four thousand volumes. The medical library in the same building, numbers about seven thousand volumes, besides unbound pamphlets. In all the general library contains 105,279 volumes and 1,530 maps.

A working library is also provided in a reading room of the Chemistry Building, with over one thousand works of immediate reference, duplicates of those in the General Library. These works are in constant use by students for reference reading upon their laboratory work and in preparing for their recitations. The files of current numbers of the journals of chemistry and pharmacy are also provided in the reading room.

THE CLASS TEXT-BOOKS of the School, those which the student should obtain for himself, can be obtained in the book-stores in this University town at lower rates than those customary in the general trade of the large cities. These text-books include the following: In General Chemistry, Freer. In Qualitative Analysis, Prescott and Johnson. In Quantitative, Cheever and Smith's Select Methods. In Pharmacy, the U. S. Pharmacopœia. In Botany, Bastin. In Pharmacognosy, Flückiger, Maisch. In Organic Chemistry, Bernthsen, Richter. In Organic Analysis, Prescott, Allen, Lyons.

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**THE MUSEUM.**

This comprises collections in Pharmacognosy and the chemical industries. It occupies a floor space of 2,500 square feet in the chemistry building, and is provided with permanent cases. The chemical industries are represented by collections of the materials and the successive products of manufacture, and the resources and methods of industrial art.

IN PHARMACOGNOSY, the collection of medicinal plants is extensive and well chosen for instruction both in botany and in commercial history. It is represented by the series of working supplies in daily use in the

classes. The crude drugs are displayed in comparison with their active constituents, each in its proportional quantity. Pharmacy is exemplified in the preparations of the pharmacopœia, the national formulary, and apparatus for their production.

### **Botanical Gardens.**

The botanical gardens adjoin the building of the School of Pharmacy. The principal orders of flowering plants are here cultivated. They include the most important of the medicinal species, as well as experimental plantations, among which are grown drugs for chemical and pharmacological investigation. The gardens are used by the classes in pharmacognosy, pharmacy, and materia medica.

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### **FEES AND EXPENSES.**

THE MATRICULATION FEE is \$10 for residents of Michigan, and \$25 for others. It is paid but once and gives privileges of permanent membership in any department of the University.

THE ANNUAL FEE is \$35 for residents of Michigan, and \$45 for others. It is paid the first year, and each year thereafter.

In the Chemical Laboratory the student pays by account for the chemicals and apparatus which he uses. The expense varies with prudence and economy, the average amount being about one dollar and twenty cents per week. Advanced payment is required from time to time; the first deposit being twenty dollars.

At graduation there is a diploma fee of \$10.

Students obtain board and lodging in private families for from three to five dollars a week. Room rent varies from seventy-five cents to two dollars a week for each student. Students arriving in Ann Arbor can obtain information in regard to rooms and board by calling at the Steward's office. A register of rooms is also kept at Newberry Hall, under the care of the Students' Christian Association,

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### **CORRESPONDENCE.**

Letters of inquiry may be addressed to Professor A. B. Stevens, Secretary, or to Professor Prescott, Dean, School of Pharmacy, Ann Arbor, Mich.

## STUDENTS IN 1899-1900.

## Holders of Fellowships and of Grants for Research.

NAME.	RESIDENCE.
Harry Mann Gordin, Ph.D., <i>University of Berne, Holder of Grant from the Committee of Revision and Publication of the Pharmacopœia of the United States,</i>	San Francisco, Cal.
Paul Ingold Murrill, Ph.D., <i>Holder of the Stearns Fellowship in Pharmaceutical Research,</i>	Hickory, N. C.

## Resident Graduates.\*

NAME.	DEGREE.	CREDIT.	RESIDENCE.
Harry Edwin Douglas, Ph.C.,	B.S.	65	Paw Paw.
George Millard Heath, Ph.C.,	B.S.	92	Ann Arbor.
Charles Willis Johnson, Ph.C.,	B.S.	102	Ann Arbor.
Alice M. Stevens, Ph.C.,			Evansville, Wis.

## Undergraduates.

NAME.	DEGREE.	CREDIT.	RESIDENCE.
Harry Albers,	Ph. C.	26	Saint Louis, Mo.
Glenn Mason Andrews,	B. S.		Petoskey.
Lyman Fred Barlow,	Ph.C.	60	Hastings.
Ernest Joseph Belser,	Ph.C.	33	Ann Arbor.
Edwin Judson Bennett,	Ph.C.	33	New Haven.
Pearl Charlotte Bennett,	Ph.C.	29	Ecorce.
Harry Denman Berry,	Ph.C.	48	Mount Sterling, Ky.
Bessie Beatrice Blackburn,	Ph.C.		Sault Saint Marie.
Frederic Hathaway Borradaile, L.L.B.,			Ann Arbor.
Walter John Braidwood,	Ph.C.		Almont.
John Broene,		18	Grand Rapids.
Mary Liston Brown,	Ph.C.	11	Saint Joseph.
Christian Adam Burck,	Ph.C.		Monroe.
Samuel James Buzzell,	Ph.C.		Waterford,
Frank Deatrich Cocklin,	Ph.C.		Milford, Neb.
Newell Cook, B.S., <i>Albion Coll.,</i>			Hanover.

\*The abbreviations in the column headed DEGREE indicate the degree for which the student is studying. Where no abbreviation is given, the student is studying without being registered as a candidate for a degree. The figures in the column headed CREDIT indicate the number of hours of work taken prior to the beginning of the current academic year, 1899-1900, and completed without conditions, or credited on advanced standing. By an hour of work is meant the equivalent of one exercise a week for one semester. Compare page 11.



Charles Henry Dawson,	Ph.C.	Hastings.
Edgar D. DeLaMater,	Ph.C.	Amsterdam, N. Y.
Rafael del Valle,	Ph.C.	San Juan, Puerto Rico.
Thurston Nathaniel Dissosway,	B.S.	Pittsburgh, N. Y.
Cecil Veva Dunbar,	Ph.C.	Shelton, Wash.
Harold Haggard Eatough,	Ph.C.	Gladstone.
Charles Ralph Eckler,		Elyria, O.
Ben Putman Edmunds,	Ph.C.	Bangor.
Edgar Charles Edsill,	Ph.C.	33 Jackson.
Herbert William Emerson,	B.S.	33 Burlington, Ont.
Lemuel William Famulener,	Ph.C.	35 Galesburg, Ill.
John Estill Ferris,	Ph.C.	28 Ann Arbor.
Llewellyn Elliott Frazier,	Ph.C.	33 Muskegon.
Frank Leonard French,	Ph.C.	33 Spring Arbor.
Harry Gerber,	B.S.	32 Fremont.
Chares Nicholas Greusel,	Ph.C.	18 Sioux City, Ia.
José Guillermety, A.B., <i>University of Barcelona,</i>	Ph.C.	San Juan, Puerto Rico.
Edgar Steiner Hauenstein,	Ph.C.	37 Bluffton, O.
George F. Herbert,		50 South Lake Linden.
George Delbert Hilton,	Ph.C.	26 Fremont.
Warren Winslow Horne,	Ph.C.	33 Fayetteville, N. C.
Fred Hudburg,	Ph.C.	Nordhoff, Cal.
Orrin Dean Hudnutt,	Ph.C.	Hanover.
Jeremiah Anglim Hynes,		Jam.
Albert Klein,	Ph.C.	Chicago, Ill.
Edward Nicholas Emil Klein,	Ph.C.	33 College Point, N. Y.
Andrew Christian Lassen,	Ph.C.	Port Huron.
Emory Elias Lewis,	Ph.C.	26 Rockford, Ill.
Frank Morton Leslie,	Ph.C.	Manito, Ill.
Eugene Chauvin McConn,		Fort Madison, Ia.
Stanley Lawrence Marsh,	Ph.C.	Gregory.
John Richard Martin,	Ph.C.	38 Ida.
Oscar Irving Mattheai,	Ph.C.	Chicago, Ill.
Willis Irving Millington,	Ph.C.	18 Trenton, Mo.
Maude Emily Mills,		Ann Arbor.
John Woodford Neely,	Ph.C.	Chicago, Ill.
Augustus O'Brien,	Ph.C.	33 Bessemer.
William Alexander Pearson,	Ph.C.	18 Ann Arbor.
Albert Theodore Pohlmann,	Ph.C.	Pierce, Neb.
Nancy Ruth Reddick,	Ph.C.	Niles.
John Byron Reed,	B.S.	Lincoln Centre, Me.
Emmet Rowe,	Ph.C.	Redlands, Cal.

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Earl Alfred Ryan,	Ph.C.	15	Newberry.
Robert Louis Scheldt,	Ph.C.		Ann Arbor.
Anna Imogene Schultz,	Ph.C.		Ellenville, N. Y.
Arthur Garfield Smith,	Ph.C.		Winchester, Ill.
George Giles Stilwell,	Ph.C.	26	Jonesville.
Arthur Louis Todd,	Ph.C.	33	Spring Arbor.
Marie Helen von Borries,	Ph.C.		Louisville, Ky.
Sigrid von Zellen,	Ph.C.	11	Skanee.
Alfred George Walker,	Ph.C.		Ann Arbor.
Harold Cole Watkins,	Ph.C.		Waterville, Me.
Frank Holmes Whiting,	Ph.C.	38	Union City.
Frank Allen Williams,	Ph.C.		Ionia.
Frank Yott, Jr.,	Ph.C.	38	Midland.

Flora Luella Goeschel, Bay City, enrolled in the Department of Literature, Science, and the Arts, is also pursuing studies in the School of Pharmacy.

## REGISTER OF ALUMNI.

**HISTORICAL.**—The Chemical Laboratory of the University opened to students in 1856. A course in operative pharmacy was added to the laboratory curriculum in 1869, and was held open to those who had completed at least one of the chemical courses. From the first the laboratory was provided for the use of students of all Departments of the University, so far as chemical studies enter into the curriculum of each, and this provision in common for all the departments has continued to the present. From 1860 to 1868 Certificates of Proficiency were granted to students of any department who had completed with credit one or more of the laboratory courses of experimental study and had passed the chemical examinations.

The laboratory course in operative pharmacy had been taken by students of the Department of Medicine, students of the Department of Literature and Science, and by special chemical students, for eight years, and to the number of one hundred and twenty-one persons, before the organization of a Department of Pharmacy. Of these early students of chemistry and pharmacy a full directory of residence and occupation cannot now be given.

The School of Pharmacy was organized in 1868, at first as a polytechnic division of the Department of Literature, Science, and the Arts. The charter of the School rests upon the acts of the Regents of the University in 1868 and 1876, the laws of the State in 1851, and the Constitution of Michigan. THE DEGREE OF PHARMACEUTICAL CHEMIST, with the diploma of graduation in pharmacy, was first conferred in 1869. THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY was first conferred in 1897. THE DEGREE OF MASTER OF PHARMACY was conferred, as a second degree upon examination, on a number of persons from 1887 to 1895. The following Register of Alumni contains the names of all who have graduated in pharmacy at the University. The names of non-graduate students, with address and occupation, are included in some instances, as obtained.

The "General Catalogue of Officers and Students of the University," 1837 to 1890, 472 pages (\$1.75), contains the names of NON-GRADUATE STUDENTS IN THE SCHOOL OF PHARMACY, to the number of 227, with residence and occupation so far as obtained. This "General Catalogue" is being revised for a new edition, which will be issued in about a year, and will be much extended in its record of non-graduate students. A considerable number of these have become widely known for what they have done in the profession of pharmacy.

The total number of graduates in the School of Pharmacy is 795.

*The Alumni of the University in all its Departments* are organized together in THE ALUMNI ASSOCIATION OF THE UNIVERSITY OF MICHIGAN. This general organization, three years ago, took the place of the alumni societies of the several departments, and its business is carried on by means of the office of General Secretary of the Alumni Association, open throughout the year, and in correspondence with graduates and other former students in all parts of the world. This office is in communication with the Local Societies of Michigan Alumni, east and west, and there is issued once a month, "The Michigan Alumnus." The General Secretary of the Alumni Association may be addressed as such, and correspondence is invited upon the interests of alumni of all departments.

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### ALUMNI.

*Graduates holding the degree of PHARMACEUTICAL CHEMIST, conferred by this University in the year given next following the graduate's name, and other degrees as stated. The names of non-graduate students of this School, so far as given, are marked with a †.*

ABBEY, CHARLES C.—1889.—Sometime in pharmacy. In the firm of Buena Vista Optical Co., 260 Main St., Dallas, Texas.

ADAMS, ALFRED W.—1871.—M.D., Univ. Mich. 1871. Physician, Bellevue, Mich.

\*ADAMS, ARTHUR W.—1891.—Some time in dispensing. Manufacturing Pharmacist with Bristol, Meyers Co., 277-279 Greene Ave., Brooklyn, N. Y. Died at Chesaning, Mich., May 31, 1900.

ADAMS, JOHN N.—1897.—Served in the war with Spain. In poor health. Address, Sault Ste. Marie, Mich.

- ADLER, SAMUEL W.—1883.—Formerly engaged in pharmacy. Secretary and Treasurer of the Cella Commission Co., Stock and Bond Brokers, 200 N. Fourth St., St. Louis, Mo.
- ALBERS, HARRY.—1900.—To continue studies for B.S. in pharmacy. Home address, care Dr. Francis Hemn, St. Louis, Mo.
- ALCORN, GEORGE S.—1886.—Pharmacist and manufacturer of flavoring extracts, Columbia, Tenn.
- \*ALLEN, CHALMERS P.—1888.—Pharmacist, West Bay City, Mich. Died at West Bay City, September, 1897.
- ALLEN, HARRIS E.—1892.—B.S., Fayette College. Pharmacist with Wilson and Lee, Morenci, Mich.
- ALLEN, JAMES A.—1881.—Ph.G. Ontario Coll. Phar. 1882. Pharmacist, 326 Spadina Ave., Toronto, Ontario. (?)
- ALLEN, SAMUEL E.—1876.—President of the Allen-Clark Drug Co., Akron, O. Member Ohio State Phar. Assoc.
- ALLISON, CHARLES W.—1888.—Passenger Foreman M. K. & T. R. R., Denison, Texas.
- ALMOND, CHARLES W.—1884.—Farmer, Ann Arbor, Mich.
- ALLMENDINGER, CHARLES G.—1882.—Graduate student at the University, 1882-84. Chemist in charge of the Manufacturing Department of the Michigan Drug Co., 26-38 Congress St., Detroit, Mich.
- ALLSHOUSE, HARRY A.—1889.—Representing Parke, Davis & Co. as general salesman for Kansas, Oklahoma and Indian Territory. Address, 1124 Tyler St., Topeka, Kas.
- ALLWORTH, JAMES E.—1889.—Formerly chemist at the Medical and Surgical Sanitarium. Manufacturing Chemist and dealer in physicians' supplies, Battle Creek, Mich.
- AMERMAN, ALBERT S.—1871.—M.D., Univ. Mich., 1871. Physician and chemist, Rockford, Pennington Co., S. Dakota.
- \*AMES, JAMES W.—1896.—Pharmacist with S. E. Welch, Jr., Berea, Ky. Died at Little Rock, Ark., July 16, 1899.
- AMES, JOSEPH H.—1876.—For some time pharmacist, Three Oaks, Mich. Vice-President and General Manager of Manufacturing Dept. of McDonald, Wessel and Ames Co., manufacturers and jobbers in bicycle sundries and leather goods, 66 State St., Detroit.
- ANDO, SHINICHI.—1891.—Chemist of Apollo Iron and Steel Co., Apollo, Pa. (?)
- ARMSTRONG, IRA A.—1879.—Pharmacist, some time with Craig & Stewart. Chemist with the R. T. French Co., Rochester, N. Y. Address, 202 Frank St.

- ARMSTRONG, RANSOM S.—1894.—Pharmacist with Dr. R. S. Armstrong (father), Chelsea, Mich.
- ARMSTRONG, ROBERT B.—1890.—M.D. 1894. Some time assistant chemist at New York State Agricultural Experiment Station, Geneva, N. Y. Assistant in Pharmacy, University of Michigan, 1891-92. Division surgeon Pere Marquette R. R. Physician and surgeon, Charlevoix, Mich.
- \*ARNOLD, CHRISTOPHER F.—1869.—M.D. Detroit Medical College, 1868. Physician and pharmacist, Port Madison, Washington Territory. Died in San Diego, California, in 1872.
- †ARNOLD, CHARLES.—Student in 1888-89.—Pharmacist, Bellaire, Ohio.
- ASHLEY, WILLIAM F.—1891.—Manager Steel Plant Pharmacy, 614 Tenth Ave., South Lorain, Ohio.
- ATWOOD, DANIEL W.—1892.—In the firm and manager of French Street Pharmacy, 1000 French St., Wilmington, Del.
- AUSTIN, FREDERICK J.—1897.—Some time in pharmacy with George J. Wiesinger, Detroit, Mich. Manufacturing pharmacist with Frederick Stearns & Co., Detroit, Mich.
- AVERY, JOHN H.—1877.—Mass. Institute Technology, 1877-78. Lumber dealer, Detroit, Mich.
- AYRES, JAMES N.—1879.—M.D. Hom. Med. Coll. Univ. Mich. 1889. Physician, 534 S. Burdick St., Kalamazoo, Mich.
- BARBITT, FRANKLIN T.—1883.—Pharmacist in the firm of C. O. Babbitt & Son, Corry, Pa. In 1883-84 dispensing clerk in the chemical laboratory, University of Michigan.
- BACHELDER, EVA A. T.—1897.—In the firm of Frisch & Co., St. Charles, Minn., proprietors of two drug stores.
- BACHMAN, JOHN S.—1897.—In pharmacy with J. Smith & Son, 417 Court St., Saginaw, W. S., Mich.
- †BACON, WILLIAM R.—Student in 1889-90.—Druggist, Sault Ste. Marie, Mich.
- BAERT, GEORGE H.—1890.—M.D. Univ. Penn., 1893. Instructor in Chemistry at Purdue University School of Pharmacy in 1890-91. Prof. Pathology and Pathological Chemistry G. R. Medical College, Physician, 147 Monroe St., Grand Rapids, Mich.
- BAILEY, FRED C.—1881.—M.D. Univ. Mich. 1883. Physician, Adams Center, N. Y.

- BAIRD, JULIAN W.**—1883.—A.M., Univ. Mich., 1883. M.D., Harvard 1890. Dean and Professor of Analytical and Organic Chemistry in the Mass. College of Pharmacy, Boston, Mass. From 1883 to 1886 Instructor in Assaying and Qualitative Analysis at Lehigh University. In 1882-83 Assistant in Quantitative Analysis, University of Michigan.
- \*BAKER, CHARLES.**—1887.—Pharmacist with C. P. Parkhill & Sons (S. E. Parkhill, Ph.C., 1887), Owosso, Mich. Died March 23, 1892.
- BAKER, CHARLES W.**—1890.—B.A., Kenyon College 1896, Berley Hall, 1898. Rector St. Paul's Protestant Episcopal Church, Conneaut, Ohio. Also in the firm of George R. Baker & Son, Pharmacists, Mount Vernon, Ohio. Address, Conneaut, Ashtabula Co., Ohio.
- BAKER, FRED W.**—1890.—Pharmacist, Broadway and 38th St., N. Y.
- BANCROFT, RICHARD B.**—1881.—At present in Quartermaster's Department U. S. Army Hospital Ship "Relief," Manilla, Philippines. Address, Care Eisle & Hunt, Hot Springs, Arkansas.
- BANISTER, JOHN L.**—1886.—Pharmacist in firm of J. L. Banister & Co., 201 South Washington Ave., Saginaw, E. S., Mich.
- BARIE, HERMAN L.**—1883.—Member of firm of the Digestos Co., Manufacturing Pharmacists, and manager of Schafer's Pharmacy, Detroit, Mich. Address, 535 Macomb St.
- BARINGER, FREDERICK J.**—1897.—Analytical Pharmacist and Pharmacologist with W. S. Merrill Chemical Co., Cincinnati, Ohio. Address, 3240 Ridgeway Ave., Walnut Hills.
- BARLOW, LYMAN F.**—1900.—Hastings, Mich. To continue studies for 1900-1901.
- \*BARNABEE, HIRAM S.**—1883.—Pharmacist in the Northern Michigan Asylum for the Insane, Traverse City, Mich. Died Jan. 19, 1893.
- BARNHART, CLARENCE E.**—1894.—Pharmacist with Nicaise Drug Co., Peoria, Ill. Address, 607 Hamilton St.
- BARRY, BENJAMIN T.**—1889.—Pharmacist, Houghton. Mich.
- BASSETT, EMMET C.**—1883.—Formerly in firm of Bassett & Mason, Pharmacists, Ann Arbor. Now employed in the railway mail service, M. C. R. R. Address, Three Rivers, Mich.
- BAUM, CLARENCE H.**—1896.—B.S. (Phar.), 1898. In graduate studies for M.S., in 1898. Manager in pharmacy for his father, Danville, Ill.
- \*BAUM, CHARLES M.**—1875.—A pharmacist, formerly at Holland, Mich., afterward in San Diego, Cal. Died in San Diego January 5, 1890.

- BAUMHARDT, ADAM J.—1887.—M.D., 1895. Chemist for the City of Hutchinson, Professor of Chemistry and Botany, Kansas Normal University, Hutchinson, Kansas, until 1893. President of Lorain Water Works (municipal ownership). Physician, Surgeon and Pharmacist, Lorain, Ohio.
- BEACH, LYMAN F.—1876.—Pharmacist in the firm of Mason & Beach, Bay City, Mich.
- BEAL, EMERY R.—1887.—Pharmacist, 224 Congress St., Ypsilanti, Mich.
- †BEAL, JAMES H.—In the School of Pharmacy in 1882-83; in the Department of Law in 1884-85. Professor of Pharmacy in Scio College, Scio, Ohio.
- BECKER, CHARLES L.—1881.—Pharmacist, 304 Main St., Ottawa, Kansas.
- BELSER, ERNEST J.—1900.—With Wendoner Pharmacy, 1505 Woodward Ave., Detroit, Mich.
- BENJAMIN, EVI D.—1897.—Assistant in Pharmacy in this school, 1897-99. Chemist with Dr. A. B. Lyons, of Nelson, Baker & Co., Detroit, Mich.
- BENNETT, EDWIN J.—1900.—To continue studies in the University in 1900-01.
- BENNETT, PEARL CHARLOTTE—1900.—Ecorse, Mich.
- BENTON, LOU N.—1893.—Pharmacist with Sanders & Shirer, Aurora, Ill.
- BERRY, HARRY D.—1900.—In Pharmacy, 1202 Gratiot Ave., Detroit, Mich.
- BERRY, ROBERT M.—1891.—Huntington, Ind.
- BIEHL, CARL J.—1898.—With L. A. Biehl, Pharmacist, 909 Hancock St., Sandusky, Ohio.
- BIRD, HARRY L.—1891.—Pharmacist, Hotel Benton Block, Benton Harbor, Mich. Secretary and Treasurer of West Michigan Nurseries.
- BIRKMIER, HARRY W.—1892.—Pharmacist in the firm of C. R. McCulloch & Co., Toledo, Ohio.
- †BIRNEY, JOHN D.—Student in 1888-89.—Registered Pharmacist, Eaton Rapids, Mich.
- †BLAIR, HOMER C.—Student in 1892-93.—Pharmacist, Atica, Mich.
- BLISS, HALE.—1869.—Some time Instructor in Woman's Med. College, N. W. Univ. Manufacturers agent. Address, 571 Flournoy St., Chicago, Ill.



- BLOCK, LEO P.—1889.—With M. Block & Co., wholesale druggists and manufacturing pharmacists, Chattanooga, Tenn.
- BLOME, WALTER H.—1898.—In pharmacy with J. H. Fenner, Opera House Block, Bay City, Mich. To study in the University in 1900—01.
- BLOOMFIELD, EDMUND M.—1869.—M.D., University of Michigan 1869. Physician and Surgeon at Peru, Ind.
- BLUM, EDWARD.—1884.—Drug Examiner U. S. Appraiser's Office, Detroit. Address, 383 Sheridan Ave., Detroit, Mich.
- \*BODEMANN, FRANK E.—1873.—M.D., University of Michigan 1874; M.A. Univ. Notre Dame, 1879. Surgeon in the Servian Army in 1876-77. Studied medicine in London and Vienna in 1875-76. Died, 1884, in Detroit, Mich.
- BODEN, EDWIN T.—1889.—Pharmacist, 512 Midland St., West Bay City, Mich.
- \*BOEHME, CHARLES A.—1870.—Pharmacist. Later chemist with William S. Merrill & Co., wholesale drug dealers, Cincinnati, Ohio. Died, December, 1874.
- BOETCHER, CHARLES V.—1888.—Chemist in charge of laboratory of Orr, Brown & Price, Columbus, Ohio.
- BOGGESS, NORMAN T.—1897.—Pharmacist with T. N. Bogges, 906 Third Ave., Huntington, West Virginia.
- BOIS, EUGENE P.—1869.—B.A., Oberlin, 1867; M.D., University of Michigan, 1869. Physician, Grand Rapids, Mich.
- †BORRADAILE, FRED H.—Student in 1889-90 and 1891-92. Again in special studies in 1899-1900.—LL.B.—Chemist in State Dairy and Food Department, 1897-99. Ann Arbor.
- †BOSTICK, CHARLES H.—Student in 1890-91.—Pharmacist, Manton, Mich.
- BOUGHTON, ENOS G.—1872.—Manufacturing chemist for flavors and perfumes. Pittsford, Monroe Co., N. Y.
- BOWDISH, GORDON A.—1886.—For some time pharmacist with A. M. Pett & Son, (W. F. Pett, Ph.C., 1885), Winona, Minn. Assistant Cashier Old Second National Bank, Aurora, Ill.
- BOWEN, ROYAL F.—1879.—For some time commercial pharmacist with H. Bosworth & Sons, 337 E. Water St., Milwaukee, Wis. Commercial traveler, McGregor, Iowa.
- BOWEN, THOMAS W.—1889.—For some time chemist of Elkhorn Mining Co., Idaho City. Mining Engineer and Examiner. P. O. Box 700, Salt Lake City, Utah.

- BOWER, FRANCIS T.—1876.—Pharmacist and manufacturing chemist, for the T. J. Collins Co., 2215 Union St., Toledo, Ohio. For some time President of the Ohio State Board of Pharmacy. Director of Retail Druggists' Mutual Fire Insurance Association.
- †BOWER, JOHN A.—Student in 1888–89.—Druggist, Iroquois, S. Dakota.
- BOWERFIND, HENRY J.—1895.—With the Meyer Brothers, Prescription Pharmacists; since with Fort Wayne Drug Company, Fort Wayne, Ind.
- BOYCE, SAMUEL R.—1890.—M.D., University of Michigan, 1899. In graduate studies, University of Michigan, 1893–94. Instructor in Pharmacognosy, University of Wisconsin. Physician, 302 State St., Madison, Wis. Some time Instructor in Pharmacy at Kansas University.
- BOYD, JAMES P.—1873.—M.D., Long Island College Hospital, 1875. Physician, 143 S. Summit St., Akron, Ohio.
- BRADDOCK OSCAR L.—1871.—Pharmacist, 237 E. Colorado St., Pasadena, Cal.
- †BRAINARD, FRANK J.—Student in 1888–89.—Druggist, Eaton Rapids, Mich.
- †BRAYSHAW, WALTER W.—Student in 1890–91 and 1891–92.—Chemist, Arnold Soap Co., 117 So. Water St., Peoria, Ill.
- BRIGGS, PERRY.—1891.—Apothecary to the University Hospital, Ann Arbor, Mich, since his graduation.
- BROCKMEIER, JOHN H.—1882.—Formerly pharmacist. Now Secretary and Treasurer Burdett Organ Co., Freeport, Ill.
- \*BROOKS, FRANK A.—1878.—Pharmacist, formerly at Gonzales, then at Galveston, Texas. Some time the professor of chemistry and botany at Goliad Military College. Died Sept. 6, 1894, at Corpus Christi, Texas.
- BROOKS, WALTER S.—1899.—Served in the war with Spain. In the study of Medicine.
- BROWN, JOHN G.—1873.—A.B., Albion College, 1871. Pharmacist 1875–92. President of the Commercial and Savings Bank, Albion, Mich.
- BROWN, JOHN H.—1897.—In Pharmacy with George W. Brown, Wilmington, Ohio. Served in the war with Spain.
- BUCHANAN, WILLIAM A.—1870.—M.D., Miami Med., College 1875. Pharmacist until 1874. Physician, Paris, Ill.
- BUCKHAM, ANDREW J.—1886.—Pharmacist, Flint, Mich.

- BUCKHAM, JAMES N.—1876.—M.D., University of Michigan. 1878. Physician, Flint, Mich. Surgeon C. G. T. Ry. Local Surgeon F. & P. M. Ry.
- BUNN, CLAUDE M.—1895.—Sometime in the firm of Bunn & Poel Drug Co., Kalamazoo, Mich. Pharmacist, Cocoa, Fla.
- BURGESS, HOMER—1891.—Pharmacist, Central Dispensing and Emergency Hospital, Washington, D. C. Address, 1132 10th St., N. W.
- BURKE, WILLIAM H.—1884.—Pharmacist, 152-157 Grand River Ave., and 291 Woodward Ave., Detroit, Mich.
- BURNETT, CLINTON J.—1872.—Until 1883 in the firm of J. C. Burnett & Co., Pharmacists, Lapeer, Mich. General Traveling Agent for National Savings Co., Lansing Mich. Address 720 Ionia St., Lansing, Mich.
- BURROUGHS, CHARLES S.—1876.—Formerly in the employ of The American Chemical Co. Pharmacist, Jennings, Oklahoma.
- BURT, JOHN C.—1875.—Business manager and purchasing agent (formerly pharmacist) of the Illinois Eastern Hospital for the Insane, Kankakee, Ill.
- CADY, WALTER B.—1892.—B.S., 1897. Assistant Chemist at the Agricultural Experiment Station, Columbia, Missouri.
- CALKINS, ELEAZER E.—1884.—Pharmacist, State St., Ann Arbor.
- CALKINS, HULETT W.—1878.—Formerly a Dispensing Pharmacist at Mt. Clemens, Mich. General Manager Warner's Safe Cure Co., Rochester, N. Y.; London, England, and Melbourne, Australia. Address, Rochester, N. Y.
- \*CAMPBELL, ARTHUR.—1891.—Manager of the Pharmacy of Campbell & Son, Crystal Falls, Mich. Was kicked by a horse April 23, and died May 12, 1897.
- CAMPBELL, WILLIS G.—1879.—Ph.B., University of Michigan, 1876. Pharmacist with John Campbell, 1415 Court Place, Denver, Col.
- \*CAREY, WINFIELD S.—1871.—Pharmacist, The Whitaker Drug House, Phoenixville, Pa. Died April 16, 1893.
- CARLEY, GEORGE L.—1882.—Manufacturing Chemist with Aldo Sommer Drug Co., Quincy, Ill.
- †CARMODY, JOSEPH E.—Student in 1889-91.—Pharmacist, Watervliet, Mich.
- CARR, LOUIS B.—1887.—Pharmacist with George E. Taylor, 414 Harrison Ave., Leadville, Colorado.

- CARSSOW, RUDOLPH B.—1892.—Chemical Vice President and Director of the Laboratories of Allen Pfeiffer Co., 815-825 N. Seventeenth St., St. Louis, Mo.
- CARY, JOHN C. W.—1870.—Commercial pharmacist, with Harle, Haas & Co., Council Bluffs, Iowa. Address, Atlantic, Cass Co., Iowa.
- CASE, EBEN T.—1884.—Formerly pharmacist in the firm of Case & Baldrige. Drug Broker, 719 Washington Ave., Kansas City, Kan.
- CASE, MARVIN T.—1869.—M.D., University of Michigan, 1870. Assistant in analytical chemistry, University of Michigan, 1869-70. City Health Officer. Physician, Attica, Ind.
- CASE, THEODORE G.—1870.—Lawyer, 338 Warren Ave., Chicago, Ill.
- CHAMBERLAIN, FRED J.—1889.—Pharmacist, in the company of F. J. Chamberlain & Bro., 53 West Main St., Battle Creek, Mich.
- CHAPEL, FRED NEWTON.—1893.—Pharmacist, in the firm of Chapel & Morse, (O. R. Morse, Ph.C., 1899,) Charlevoix, Mich.
- CHURCH, STARK K.—1889.—M.D., University of Michigan, 1892. Some time Pharmacist with C. M. LaRue, West Bay City, Mich. Physician, Marshall, Mich.
- CHURCH, WILLIAM D.—1879.—Until 1899 general agent for Michigan for Parke, Davis & Co. In the firm of Church & West, Morton House Pharmacy, Grand Rapids, Mich.
- CHURCHILL, ALFRED P.—1891.—With S. P. Churchill, Pharmacist, 36 Euclid Ave., Cleveland, Ohio.
- CHURCHILL, ORRIN L.—1876.—Senior member in the Drug and Grocery firm of Churchill, Webster & Bolinger, Jamestown, N. Dakota; also in the firm of Churchill, Webster & Co., wholesale groceries, Great Fall, Montana.
- CIRKLER, CHARLES H.—1881.—Pharmacist, 602 Nicolet Ave., Minneapolis, Minn.
- \*CLARK, EDWARD W.—1886.—Ph.G., New York College of Phar., 1884. Pharmacist some time at 24 East Main St., Amsterdam, N. Y. Died at Ann Arbor, Mich., Jan. 4, 1896.
- CLARK, FRANK M.—1885.—Pharmacist in the firm of Clark Brothers, Jamestown, New York.
- CLARK, JAMES B.—1880.—Investment broker and dealer in mortgage loans, Sioux Falls, S. Dakota. Previously a pharmacist at Mt. Carroll, Ill.
- CLARK, JOHN T.—1876.—Retired, Clinton, Mich.

- CLARKE, GRAHAM.—1882.—Chemist and proprietor of Cleveland Nitrous Oxide Works, 106 Canal St., Cleveland, Ohio. Previously analytical chemist with W. E. Judson, Cleveland, Ohio.
- COAD, NICHOLAS G. O.—1875.—M.D., Univ. Vt., 1887. Physician and pharmacist, Hull, Iowa.
- COBB, JAMES W.—1897.—In pharmacy with E. E. Calkins (Ph.C., 1884), Ann Arbor, Mich.
- †COCHRAN, FRED. A.—Student in 1881-82, 1883-84.—Charlevoix, Mich.
- CODY, BERT E.—1892.—Some time chemist with the Natural Gas Co. Bookkeeper Indianapolis Gas Co. Address 1028 West 28th St., Indianapolis, Ind.
- COFFIN, CHARLES L.—1884; B.S., 1882.—Formerly manufacturing chemist in the Coffin & Wood Chemical Company, manufacturers of essential oils, etc., Detroit, Mich. President Welded Steel Barrel Corporation. Address 35 Medbury Ave., Detroit, Mich.
- COLE, WILLIAM W.—1879.—For some time a pharmacist in Omaha, Neb. City Salesman for McCord Brady Co., wholesale grocers, Omaha, Nebraska.
- COLEMAN, SHELDON.—1893.—Pharmacist in charge of store for J. E. Hamilton, M.D., Lawton, Van Buren Co., Mich.
- COLLINS, CLAYTON F.—1872.—Pharmacist, Homer, Mich.
- COLLINS, WILLIAM E.—1890.—Pharmacist in the company of Will E. Collins & Co., 115 North Washington St., Owosso, Mich.
- †COLMAN, HOWARD G.—Student in 1871-72.—Pharmacist and manufacturer. President Mich. State Phar. Assoc., 1891-92. Kalamazoo, Mich.
- CONDON, WILLIAM D.—1886.—Hancock, L. S., Mich. Secretary and treasurer of Sturgeon River Lumber Co., Chassell, Mich.
- CONRAD, JOHN F.—1884.—Pharmacist in the firm of Conrad Brothers, Otsego, Mich.
- CONRADS, JOHN R.—1886.—Pharmacist with J. P. Jarman, Trenton, Mo.
- COOK, AMASA D.—1892.—Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, New York.
- COOK, GEORGE S.—1873.—Manufacturing pharmacist, for some years with Farrand & Williams, Detroit. In pharmacy until 1898. Secretary in the firm of the A. P. Cook Co. Limited, Real Estate, Brooklyn, Jackson Co., Mich.
- COOKE, FREDERICK A.—1883.—Pharmacist, 113-115 Michigan Ave., Detroit.

- COOPER, WM. H.—1884.—Pharmacist 2000 W. 32d. St., Denver, Col. Proprietor of the Dr. Cooper Medicine Co., Galesburg, Ill. Western office at Denver.
- CORAM, JOHN A.—1898.—Pharmacist with the Columbus Pharmacal Co., Columbus, Ohio.
- CORBIN, JOHN W.—1891.—Graduate student in Metallurgical Chemistry, University of Michigan, 1891-92. Chemist Illinois Steel Co., South Chicago and Joliet, Ill., 1893-94. Teacher, Linwood, Ark.
- COTTON, ROBERT M.—1874.—M.D. University of Michigan, 1875. Assistant in analytical chemistry, in the laboratory of the University in 1874-75. Physician and pharmacist, Tyndall, Bon Homme Co., S. Dakota.
- COUGHLIN, JEREMIAH.—1876.—M.D. University of Michigan, 1877; M. A. College St. Francis Xavier, 1878. Physician to the New York Asylum for Lying-in Women, 183 Henry st. New York. (?)
- COULTER, MISS AIMEE.—1898.—Engaged in pharmacy. No. 305 Leavitt St., Chicago, Ill.
- \*COVERT, SAMUEL—1869.—M.D. University of Michigan, 1870. Died at London, Ontario, June 5, 1870.
- CRAIG, JOHN T.—1884.—Chemist with Caswell, Massey & Co., pharmacies at Newport, R. I., and at 1121 Broadway and 578 Fifth Ave., New York. Address at the last number named.
- CRAMPTON, CHARLES A.—1882.—B.L., University of Michigan, 1882; M.D. Columbia University, 1884. Chemist U. S. Department of Agriculture, 1884 to 1890. Chief chemist of the Internal Revenue Department. Washington, D. C.
- CRAMPTON, CHARLES B.—1871.—Pharmacist, in the company of Crampton & Litchfield, Flint, Mich.
- CRANE, KATE—1874.—MRS. O. C. JOHNSON.—Accountant and dispensing clerk in the chemical laboratory of the University of Michigan until 1888. Ann Arbor, Mich.
- CRITCHETT, OTIS A.—1897.—In pharmacy until April, 1898. In Thirty-first Michigan Volunteers in the war with Spain. Mining foreman, Sierra Moadá, Coahuila, Mexico.
- CROMAN, JOSEPH M.—1887.—M.D., Detroit, '92. Some time in pharmacy. Physician, Mt. Clemens, Mich.
- CROMBIE, SAMUEL M.—1882.—Formerly chemist with Chas. Baumbach Co., wholesale druggists, Milwaukee, Wis. President of the Laxakola Co., New York, and Manager, Charles Austin Bates Advertising Agency, Chicago Branch. Address, 1528 Marquette Bld'g, Chicago, Ill.

- CROWLEY, CHARLES F.—1889.—Some time Manufacturing Pharmacist with Parke, Davis & Co., Detroit, Mich. Professor of Chemistry and Toxicology in John A. Creighton Medical College.
- CUNNINGHAM, HAROLD.—1882.—Pharmacist, Bodeau Block, Lima, Ohio.
- CUNNINGHAM, THOMAS N.—1885.—Pharmacist, 136 N. Main St., Lima, Ohio.
- \*CURTIS, ALBERT CYRUS.—1870.—Ph.G., Philadelphia Coll. Phar., 1872. Was a pharmacist at Ashland, Ohio. Died, June 1876, in Wyoming Territory.
- CUSHING, GEORGE M.—1884.—Pharmacist with W. H. Cooper, (Ph.C., 1884), 2000 W. 32d. Ave., Denver, Col.
- CUSHING, LAVERN O.—1899.—Pharmacist, Belding, Mich.
- CUSHMAN, HENRY D.—1869.—Dispensing Pharmacist and Wholesale Dealer in Essential Oils of Michigan production, Three Rivers, St. Joseph Co., Mich. Proprietor of the Three Rivers Robe Tannery.
- DAMON, BYRON W.—1883.—Pharmacist in the firm of Damon & Ensign, Chattanooga, Tenn.
- DAMON, WILLIAM E.—1884.—Pharmacist, with Manual Garcia & Co., 113 Calle de Cortez, Mexico City, Mexico.
- \*DANIELS, GEORGE BEAL.—1886.—Some time a pharmacist with Field & Gray, Alpena, Mich. Died at Gregory, Mich., Feb. 21, 1889.
- \*DAVIS, CHARLES L.—1885.—From 1885 to 1888 assistant in analytical chemistry in the University of Michigan, with charge of the qualitative chemistry of the medical classes. Chemist with the Illinois Steel Co., South Chicago, Ill. Died at Nampa, Idaho, March 2, 1898.
- DAVIS, FRANK F.—1891.—Pharmacist with W. H. Davis, corner of Eleventh and U. Sts. N. W., Washington, D. C. Assistant in Pharmacy at the Howard University. Chemist for the Alpha Life Insurance Company.
- \*DAVIS, LORENZO M.—1874.—Pharmacist, some time at Prospect House, Cleveland, Ohio. In 1873-4 Assistant in Analytical Chemistry, University of Michigan. In 1876-7, Public Analyst in Ohio. Died October 29, 1892, at Colorado Springs, Col.
- †DAVIS, ROY S.—Student in 1891-92.—In U. S. Hospital Corps, Sanda Mesa Hospital, Manila Philippines.

- DAVOLL, DAVID L. JR.—1893.—B.S., 1897. Assistant in Qualitative Analysis, 1893-94; Chemist in the Research Lab. of Parke, Davis & Co., 1894-96; Acting Instructor in University of Michigan, 1896-97; Professor of Applied Chemistry in the School of Pharmacy, Northwestern University, 1897-99. Chief Chemist Peninsular Sugar Refining Co., Detroit, Mich. Factory at Caro, Mich. Address, Caro.
- DAWSON, BYRON F.—1879.—M.D., University of Michigan, 1886; Jefferson Medical College, 1897. From 1881 to 1884 a manufacturing chemist. In 1878-79, Assistant in Operative Pharmacy in the University of Michigan. Physician and proprietor of the Seaside Pharmacy, Cayucos, California.
- DAWSON, GEORGE V.—1884.—Pharmacist in the firm of Dawson & Richter, Rochester, Ind.
- DAWSON, JAMES H.—1883.—M. D., University of Michigan, 1885. Formerly Physician in Northern Michigan Hospital for Insane, Traverse City, Mich. Now practicing at Marquette, Mich.
- DEAN, GEORGE E.—1882.—Manager of the Hale Elevator Co., Minneapolis, Minn.
- DE JONGE, CORNELIUS.—1895.—Pharmacist with A. H. Lyman Co., Manistee, Mich., until 1897. Analytical Chemist with Edward R. Squibb and Sons, manufacturing pharmacists, 36 Doty St., Brooklyn, N. Y.
- \*DENISON, JOHN JULIUS.—1882.—Until 1885 Analytical Chemist with the house of F. Stearns & Co., Detroit. Died August 21, 1886, at Whitewater, Wis.
- DENNY, JESSE D.—1883.—Pharmacist in the firm of Denny & Field (E. C. Field, Ph.C., '83), 453 Main St., Buffalo, N. Y.
- DERRY, JOHN W.—1896.—Baltimore, Md. (?).
- DEYO, LEROY H.—1882.—Formerly Pharmacist, Red Cloud, Nebraska. Address, Wauseon, Ohio.
- DICKINSON, OTIS R.—1875.—For some time Pharmacist at Grand Haven, Mich. Now representative for H. K. Wampole & Co., Manufacturing Chemists, Philadelphia, Pa. Address, 3044 Prospect Ave, Kansas City, Mo.
- DIEHL, OSCAR C.—1896.—Resident Graduate in 1896-97, employed in research by the Committee of Revision of the United States Pharmacopoeia. Chemist in Biological Department of Parke, Davis & Co., Detroit, Mich.
- DIETRICH, CHARLES W.—1876.—In the firm of W. M. Dietrich & Co., Furniture Manufacturers' Agents, 250 Wabash Ave., Chicago, Ill.



- †DILLY, OSCAR C.—Graduate Student in 1894-95.—Ph.G., Louisville College of Pharmacy. In the Louisville Faculty of Pharmacy. Pharmacist, 2101 W. Walnut St., Louisville, Ky.
- DILWORTH, MAY—1882.—Mrs. JOSEPH A. COMLY.—Wilmington, Del. Address, Third and Orange Sts.
- DINGLEY, CHARLES A.—1876.—Pharmacist, Polo, Ill.
- \*DIXON, GLEASON FILMORE.—1877.—For some years a pharmacist at Jackson, Mich., and at San Francisco, Cal. Died in Ann Arbor Dec. 19, 1890.
- DODD, CHARLES W.—1882.—M.D., University of Michigan, 1884. In 1882-83 Assistant in analytical chemistry in the University of Michigan. In 1887-8 in the University of Vienna. Physician for of the eye, 907 Neave Building, Cincinnati, Ohio.
- DOEHNE, GEORGE.—1895.—Sometime with A. T. Hall, 428 Wabash St., St. Paul. Pharmacist, Austin, Minn.
- \*DOEHNE, WILLIAM HENRY.—1887.—In 1887-88 Instructor in Pharmacy in the School of Pharmacy in Purdue University. Died in 1888.
- †DORR, FRANK W.—Student in 1887-88.—Pharmacist, Manchester, Mich.
- DOTHANY, WILLIAM A.—1887.—B.S., Michigan Agricultural College, 1884. Assistant in Chemical Laboratory of Agricultural College, 1885. Pharmacist and Job Printer, 693 Michigan Ave., Detroit, Michigan.
- DOTY, GILBERT A.—1895.—In the firm of Doty Bros., 284 Warren Ave. W., Detroit, Mich.
- DOTY, JEPHTHA W.—1886.—Pharmacist in the firm of J. W. & W. P. Doty, Triangle Drug Store, Cass Ave. and Clifford St.; Doty's Pharmacy, 204 Warren Ave., and Doty Bros., Corner Woodward and Willis Aves., Detroit, Mich.
- DOTY, WIRT P.—1886.—Pharmacist. In above named firm. Cass Ave. and Clifford St. Member of the Michigan Board of Pharmacy.
- DOUGLAS, HARRY E.—1898.—Assistant in Pharmacy, in Graduate Studies in University of Michigan. With Dr. E. E. Calkins, Ann Arbor.
- DOUGLAS, SAMUEL T.—1874.—Ph.B., University of Michigan, 1873. Instructor in Quantitative Analysis, University of Michigan, 1874-75 to 1876-77, inclusive. Attorney in the Company of Bowen, Douglas & Whiting, 80 Moffat Building, Detroit, Mich.

- DRAKE, CHARLES F.**—1895.—Graduate Student in 1895-96. With Swift & Co., Chicago, Ill. Superintendent of Smelter for Northwest Copper Co., Cuprum, Idaho. Address, Kenwood Club, Chicago.
- DRAKE, FRED T.**—1892.—Pharmacist in the firm of Conwell & Drake, Van Buren, Ind.
- DRYFOOS, LOUIS A.**—1887.—Ph.D., Zurich, 1891. Dissertation on "Piazine Derivations." Woodland, Colorado.
- DUERR, CHARLES A.**—1899.—Pharmacist. with M. C. Pendleton, 1320 Grand River Ave., Detroit, Mich.
- DUNCAN, CHARLES G.**—1874.—M.D., University of Maryland, 1881. Until 1878 engaged in Pharmacy in Toledo, Ohio. President of the New Mexican Medical Society in 1897. Physician, Socorro, New Mexico.
- DUNN, JOHN S.**—1885.—In Pharmacy until recently. Farmer. Edmund, Oklahoma Territory.
- DUNN, WILLIAM L.**—1889.—M.D., 1891. B.S., 1894. Sometime assistant to the Professor of Surgery, University of Michigan. Physician in charge of the New Winyah Sanitarium, Ashville, N. C.
- DUNNING, FRED R.**—1899.—Pharmacist, with S. A. Martin, Corner Eighth and River Sts., Holland, Mich.
- †**DUNWELL, EDGAR A.**—Student in 1893-94.—Pharmacist, Otsego, Mich.
- DUPONT, RICHARD S.**—1887.—M.D. For some time Pharmacist with Park, Davis & Co. Physician, 40 Howard St., Detroit, Mich.
- †**DURSTINE, FRANK H.**—Student in 1870-71.—M.D., University of Michigan, 1875. B.S., Mt. Union 1871. Physician, Cleveland, Ohio.
- EASTWOOD, JOHN F.**—1874.—B.A., 1871. M.A., 1873. Ph.D., 1887. From 1874 to 1885 Professor of Natural Sciences in Bethany College, W. Va. In the chemical teaching corps of the University, 1886 to 1888. Professor of Chemistry and Biology, Georgetown College, Georgetown, Ky.
- EATON, HARVEY K.**—1886.—Pharmacist, sometime with Geo. W. Sloan, Indianapolis, Indiana. Proprietor at 94th St. and Columbus Ave., New York City.
- EATON, JOHN MCC.**—1879.—For some time Business Manager of The Registered Pharmacist. Chemist and Assayer, Bald Butte Mining Co., Bald Butte, Montana.
- EATON, MATTIE.**—1884.—A.M., LaGrange College. Deputy Collector with U. S. Internal Revenue Agent, Room 213 P. O. Building, Omaha, Neb. Address 2205 Douglas St.

- \***EBERBACH, WILLIAM F.**—1888.—Pharmacist, with Eberbach & son, Ann Arbor, Mich. Died January 24, 1894.
- ECKEL, GEORGE.**—1899.—Pharmacist, with R. T. Bower, Petoskey, Michigan.
- EDDY, CHARLES H.**—1876.—Pharmacist at Great Barrington, Mass. (?)
- EDSILL, EDGAR C.**—1900.—With Reed & Son, Pharmacists, 247 Summit St., Toledo, Ohio.
- EGEROFF, ALEXANDRINE.**—1878.—St. Petersburg, Russia; M.D., University of Michigan, 1878.—**MRS. FULLER.**—No. 120 Griswold St., Detroit, Mich.
- EHRHARDT, HENRY.**—1874.—Pharmacist for some years in St. Louis, Mo. Physician, 1418 Washington St., St. Louis.
- ELLIS, LEROY A.**—1887.—For some time pharmacist with L. T. Gackenhimer, Physician and Surgeon, Van Wert, Ohio.
- EMANUEL, JULIA E.**—1889.—Prescriptionist, Meyer Bros. & Co., Fort Wayne, Ind.
- EPLEY, ARTHUR W.**—1894.—Chemist with Atlantic Refining Co. (Eclipse Lubricating Oil Works), Franklin, Pa. Later Ass't. Supt. Waters Pierce Oil Co., Tampico, Mexico. Now pharmacist in the firm of Martin & Epley, Franklin, Pa.
- EWELL, ERVIN E.**—1888.—B.S. 1900.—Assistant in Qualitative Analysis, University of Michigan, 1888–90. Instructor in Summer Session 1899. First Assistant Chemist U. S. Agricultural Department. Residence, 1804 S St., N. W., Washington, D. C.
- EWELL, HERBERT P.**—1885.—M.D. University of Michigan, 1888. Pres. Automatic Truss Co., Rochester, Mich. Consulting chemist and partner in the firm of Ewell & Ewell, manufacturing chemists, Detroit, Mich.
- EWING, FRANK.**—1870.—M.D. University of Michigan, 1870. Physician, in practice until 1894. Vice-President of Ohio National Bank, Lima, Ohio. President Clay Shingle Co., Ottawa, Ohio. Address, West Cairo, Ohio.
- FABER, FRED.**—1893.—Pharmacist in the firm of Faber Bros., 2165 Ashland Ave., Toledo, Ohio.
- †**FABER, WILLIAM R.**—Student in 1891–92.—Pharmacist, Faber Bros., (F. Faber, Ph. C., '93), Toledo, Ohio.
- FAMULENER, LEMUEL W.**—1900.—In Pharmacy at Galesburg, Ill. To pursue Medical studies in the University.
- FARNUM, LOVELL.**—1894.—Pharmacist in the firm of Davis & Farnum, Glendive, Montana.

- FASQUELLE, LOUIS J.—1882.—Some time pharmacist, Petoskey, Mich. Traveling salesman for the Sherwin-Williams Co., Cleveland, Ohio. Address, 523 East Washington St., Ann Arbor, Mich.
- FELLOWS, CLARENCE A.—1880.—Pharmacist. Three Rivers, Mich.
- FELT, GEORGE H., JR.—1886.—Formerly pharmacist with Felt & Felt, Constantine, Mich. Now pharmacist in firm of West & Felt, 8 Canal St., Grand Rapids, Mich.
- FERRIS, JOHN E.—1900.—With Nelson, Baker & Co., Manufacturing Pharmacists, Detroit, Mich.
- FIELD, EDWARD C.—1883.—Pharmacist in the firm of Denny & Field, J. D. Denny, Ph.C., '83), 453 Main St., Buffalo, N. Y.
- FINLEY, WILLIAM E.—1879.—Pharmacist. Address, Hastings, Mich.
- FISCHER, RICHARD.—1892.—B.S. Chem., 1894. Some time assistant in Qualitative Analysis, University of Michigan. Instructor in Pharmacy in the University of Wisconsin. In chemical studies in Germany, 1898-1900. Address, Madison, Wis.
- FITCH, HENRY A.—1871.—M.D., University of Michigan, 1878. Pharmacist and physician, Utica, N. Y.
- FLANDERS, ANSTRICE G.—1885.—Principal of Sherwood Select School, Sherwood, N. Y.
- \*FLICK, OTIS C.—1871.—M.D. University of Michigan, 1872. Physician, Brooklyn, N. Y. Died February 22, 1890, at Cheshire, Mass.
- FLINT, MERRILL S.—1889.—Formerly Pharmacist in charge of the drug department of the Chateaufort Ore and Iron Co., Lyon Mountain, N. Y. In the firm of Flint & Beebe, paper dealers and paper manufacturers' agents, 116 Nassau St., New York.
- FOOTE, CHARLES E.—1880.—Chemist in the firm of Foote & Jenks, perfumers, Jackson, Mich.
- FORD, CHARLES E.—1870.—Some time a pharmacist at Peoria, Ill. M.D., Ruth Medical College, Cincinnati, 1885. Physician, 20 Clinton St., Cincinnati, Ohio.
- FORD, JAMES M.—1869.—M.D. University of Michigan, 1869. Pharmacist in the firm of Ford & Arnold, Kansas City, Mo. (?)
- †FORDHAM, WATSON W.—Student in 1886-87.—Druggist, Elmira, N. Y.
- FOX, ASA L.—1869.—M.D. University of Michigan, 1870. Engaged in pharmacy until 1883. Physician, 215 N. Main St., Bloomington, Ill.
- FRANK, EDWARD C.—1897.—Secretary and Asst. Manager of the Toledo House Furnishing Co., 514-520 Summit St., Toledo, Ohio.

- FRANK, HERMANN O.—1883.—Pharmacist, 468-470 Farwell Ave., Milwaukee, Wis. Member of State Board of Pharmacy, 1893 to 1899.
- \*FRANZ, HENRY S.—1889.—Formerly with James R. Hofflin & Co., Minneapolis, Minn. Then in the firm of M. H. Andrews & Co., North Vernon, Ind. Died April 10, 1893.
- FRAZEE, FRANKLIN H.—1884.—Some time manf'g pharmacist with F. Stearns & Co. Secretary and Prof. of Materia Medica and Instructor in Operative Pharmacy in Pharmacy Department of Detroit College of Medicine. Address, 416 Concord Ave., De'troit, Mich.
- FRAZIER, LLEWELLYN E.—1900.—With Graham & Ostrom, Pharmacists, Mishawaka, Ind.
- FRENCH, FRANK L.—1900.—Pharmacist with L. O. Cushing (Ph.C. '99) Belding, Mich.
- FRITTS, FRANK F.—1874.—Manufacturing pharmacist in the firm of F. F. Fritts Co., Sandusky, Ohio.
- FROMM, JOHN D.—1893.—For some time manager of Yavapai Pharmacy, Prescott, Arizona. Architect with L. G. Welker, 934 Spitzer Bld'g, Toledo Ohio.
- FROST, HENRY J.—1889.—M.D. 1894. Formerly Pharmacist, 208 S. Washington Ave., Saginaw, E. S., Mich. Surgeon for Glucose Sugar Refining Co.. On the staff of Rockford City Hospital. Office 310-313 Wm. Brown Bld'g, Rockford, Ill.
- FULLER, LOUIS C.—1876.—M.D. University of Michigan, 1879. Physician, 111 E. 12th. St., Kansas City, Mo.
- GAGE, CHANNING T.—1879.—Electrician of the Edison Light and Power Co., Allegan, Mich. Previously a pharmacist at 333 Woodward Ave., Detroit. (?)
- †GAMBLE, ROY H.—Student in 1893-94.—Druggist, Martin's Ferry, Ohio.
- GARDNER, LLEWELLYN H.—1884.—Superintendent for Frederick Stearns & Co., Detroit, Mich. Prof. Materia Medica, Department of Pharmacy, Detroit College of Medicine. At present in California on account of ill health. Address care of F. Stearns & Co., Detroit, Mich.
- GATCHELL, ERNEST E.—1881.—Pharmacist, Hudson, Wis. Formerly manufacturing chemist with T. Schumann, Atlanta, Ga.
- GATES, WILLIAM H.—1877.—Pharmacist and banker, Milton Junction, Wis.
- GEBAUER, CHARLES J.—1880.—With Evans-Gallagher Drug Co., 5th. and Washington Sts., Kansas City, Kan.

- \*GEDDES, ALLYN B.—1885.—Some time pharmacist with the Kauffman-Latimer Co., wholesale druggists, Columbus, Ohio. Died May 13, 1893, at Algedon, Ionia Co., Mich.
- GEDDES, LILLIAN M.—1893.—Pharmacist in the firm of L. M. Geddes & Co., 393 Cambridge St., Allston, Mass.
- †GERKINSMEYER, HENRY H.—In chemical studies in 1895-96-97. In the analytical laboratory of Parke, Davis & Co. until 1899. (?)
- GEISLER, JOSEPH F.—1880.—From 1880 to 1883 Assistant in Analytical Chemistry in the University of Michigan. Analytical and consulting chemist. Manager of Gersler-Relsieg Co. Chemist to the N. Y. State Department of Agriculture and to the N. Y. Mercantile Exchange. Fellow of the Chemical Society of London. Office, New York Mercantile Exchange Building, 6 Harrison St., New York.
- \*GENTSCH, GEORGE THEODORE—1871.—M.D., Univ. Wooster, 1878. Pharmacist in New Philadelphia, Ohio, afterward in Chicago, Ill. From 1876 to 1879 professor of chemistry and toxicology in Med. Dept. Wooster Univ. Died March 4, 1880.
- GEORGE, EDWIN L.—1869.—Lumber Dealer, Montclair, N. J. Sec'y. and Treas. with C. W. English.
- †GERDING, HUBERT O.—Student in 1893-94.—In Pharmacy with W. W. Kelley, Ottawa, Ohio.
- GESSLER, MAXIMILLIAN.—1882.—Drug manufacturer at 133-135 Michigan St., Milwaukee, Wis.
- \*GIBSON, ELDRIDGE D.—1878.—For many years pharmacist for James Vernor, 235 Woodward Ave., Detroit, Mich. Died, Nov. 14, 1888.
- GIBSON, WALTER MCQ.—1883.—Resident graduate of the University in 1884. Pharmacist and metallurgical chemist, Colton, Cal.
- GLAZIER, FRANK P.—1880.—Some time pharmacist in the firm of Frank P. Glazier & Co., Chelsea, Mich. In 1882 in the University of Heidelberg. Proprietor of the Glazier Stove Co., Chelsea, Mich.
- GODFREY, CALVIN P.—1884.—Formerly pharmacist, Fostoria, Seneca Co., Ohio. Publisher of the Ottawa Gazette, Ottawa, Ohio.
- GOECKER, LOUIS.—1882.—Pharmacist with W. B. Moore, East Saginaw, Mich.
- GOETTER, FRANK B.—1883.—Registered in Illinois as "Graduate in Pharmacy." Pharmacist at Colville, Wash.
- GOFF, CHARLES D.—1898.—Pharmacist with Heath & Morrison, Riverside, Cal.

- GOODRICH, LESTER A.—1882.—A.B., Hillsdale College. Pharmacist in the firm of L. A. Goodrich & Co., Hillsdale, Mich. Member of the State Legislature, 1899-1900.
- †GOODYEAR, OTTO R.—Student in 1889-90.—Pharmacist, corner Pearl and Walton Aves., Cleveland, Ohio.
- †GORDIN, HARRY M.—Resident Graduate for research work for the Committee of Revision of the U. S. Pharmacopœia in 1897-98-99-1900.—Ph.D., Berne, 1896.—Formerly pharmacist in Russia, and in San Francisco, Cal. Chemist with the Wm. S. Merrell Chemical Co., Cincinnati, Ohio.
- GORENFLO, OSCAR W.—1898.—In dispensing pharmacy with G. M. Schettler, corner Fort and Shelby Sts., Detroit, Mich.
- GOTT, EDWARD S.—1897.—Pharmacist in the firm of Geo. Gott & Son, Fort Madison, Ia.
- GOWER, ARTHUR C.—1870.—Pharmacist for some years in Ann Arbor. Farmer, Badger Mills, Wis.
- GRAHAM, ABNER R.—1893.—Pharmacist in the firm of Graham & Ostrom, Mishawaka, Ind.
- GRAHAM, JOHN B.—1871.—For some time a pharmacist. Address, 148 Charles St., Allegheny, Pa.
- †GRANTHAM, KERN H.—Student in 1888-89.—With Geo. W. Brown, Manufacturing Pharmacist, Wtlmington, Ohio.
- GREAVES, EDITH E.—1891.—MRS. EDGAR A. WHITE.—Port Huron, Mich. Teacher of chemistry in Port Huron High School, 1892-4.
- GREEN, FRANK A.—1891.—D.D.S., Chicago Dental College. Green Bros., Dentists, 218 Main St., Ashtabula, Ohio.
- †GREEN, FREDERICK K.—Student in 1889-90.—Manager Crescent Pharmacy, 1501 Russell St., Detroit, Mich.
- GREENE, ARTHUR L.—1882.—Professor of Chemistry and Dean of the School of Pharmacy, Purdue University, La Fayette, Ind.
- GREENE, MORRIS U.—1876.—Pharmacist, with Jamestown City Hospital, Jamestown, N. Dakota.
- GRIES, JOSEPH M.—1891.—Pharmacist in the firm of J. M. Gries & Co., Silver City, Utah.
- GRIFFIN, TRUMAN.—1889.—Pharmacist and manager in the firm of Hofflin Thompson Drug Co., 101 Washington Ave. South, Minneapolis, Minn. Member of the State Board of Pharmacy. Vice-President of Minneapolis Retail Druggists' Association.

- GRIFFITH, WILLIAM F.—1877.—Commercial pharmacist with the house of Farrand, Williams & Clark, Detroit, Mich. Address, Howell, Mich.
- GRIGGS, OAKLEY.—1875.—President of the Oakley Griggs Drug Co., Streator, La Salle Co., Ill.
- GRIMWOOD, CHARLES.—1876.—Manufacturing pharmacist with S. E. Allen (Ph.C., 1876), Akron, Ohio. Left pharmacy on account of poor health. On a fruit farm, Statham, Ga.
- GROCHAN, EDWARD A.—1894.—Pharmacist with F. W. Kubler & Co., 127 E. Superior St., Duluth, Minn. Address, 223 E. Second St.
- GUNDER, SAMUEL H.—1881.—Traveling salesman for Johnson & Johnson, New York. Secretary of Gunder & Payson Co. (?)
- GUNDRUM, GEORGE.—1876.—Pharmacist, Ionia, Mich. Member State Board of Pharmacy.
- GUY, OMAR G.—1870.—Ph.G., Philadelphia College of Pharmacy, 1870. Pharmacist, Yeslar Way and Second Ave., Seattle, Washington.
- HAAG, ELLIOTT H.—1892.—Exclusively a Prescription Pharmacist, 628, The Spitzer, Toledo, Ohio.
- HAARER, OSCAR HENRY—1899.—Pharmacist with Eberbach Drug Co., Ann Arbor, Mich.
- \*HAGLE, PETER N.—1870.—M.D., University of Michigan, 1869. For some time a principal of city schools. Died at New Haven, Mich., August 19, 1889.
- HAIGH, CHARLES T.—1886.—Formerly chemist in charge of the laboratory of Smith, Hubbard & Co., manufacturing chemists. Now in the firm of Chas. T. Haigh & Co., Brokers, 134 Monroe St., Chicago, Ill.
- HAIGH, DE LAGNEL—1885.—For some time manufacturing and analytical chemist in charge of the laboratory of Meyer Bros. & Co., importers and wholesale druggists, St. Louis, Mo. General manager of Rock Plaster Co., New York. (?)
- HALE, AUSTIN K.—1873.—M.D., University of Michigan, 1874. For some years a pharmacist in Ann Arbor. Physician, and Treasurer of the Ann Arbor Water Co., Ann Arbor, Mich.
- HALL, GEORGE C.—1883.—Formerly in the firm of Cook & Hall at wholesale and retail, Kiowa, Kansas. Chemist with Fraser Tablet Triturate Co., 458 Ninth St., Brooklyn, N. Y.
- HALL, NELSON A.—1897.—Pharmacist in the firm of Conway & Hall, Sault Ste. Marie, Mich. Served in the war with Spain.



- HALL, JESSIE GRAHAM—1899.—A.B., Wellesley College, 1898. Chief Clerk Census Office Sixteenth District of New York. Address Fredonia, N. Y.
- HALLOCK, ALBERT A.—1877.—M.D., University of Michigan, 1880. Physician and surgeon, 106 E. Main St., Massillon, Stark Co., Ohio.
- HANCE, SAMUEL S.—1887.—Pharmacist, 72 12th St., and 345 Trumbull Ave., cor. Locust. Left pharmacy on account of health. Now in Real Estate, 109 Pine St., Detroit, Mich.
- †HANNA, HENRY O.—Student in 1894-95.—Druggist, 1400 O St., Lincoln, Neb.
- HARRINGTON, HARRIET L.—1881.—M.D., University of Michigan, 1883. Member (by examination) Mass. State Med. Soc. Physician, 760 Dudley St., Dorchester District, Boston, Mass. Visiting physician to the New England Dispensary. Formerly apothecary to the New England Hospital for Women and Children.
- HARRINGTON, HERBERT D.—1899.—Pharmacist with Alberton & English, Deckerville, Mich.
- HARRIS, BAGLEY A.—1877.—Pharmacist in firm of Harris & Thompson, Flint, Mich.
- HARVEY, CHARLES B.—1884.—Some time manufacturing chemist with the Wm. S. Merrell Chemical Co., Cincinnati, Ohio. Professor of materia medica and toxicology in the Cincinnati College of Pharmacy, until 1893. Druggist and Manufacturing Pharmacist, Kennelt Square, Pa.
- \*HARVEY, GEORGE—1874.—B.S., Iowa Agricultural College, 1873; M.D., University of Michigan, 1875. Physician, Valley City, N. Dakota. Died at Valley City, Nov. 24, 1892.
- \*HASBROUCK, WILLAM A.—1878.—Pharmacist in the firm of Hasbrouck & Terry, Seattle, Washington. Died in July, 1890.
- \*HATCH, HORACE F.—1870.—M.D., Syracuse Univ., 1873. Physician. Died, September 2nd, 1875, at Syracuse, N. Y.
- HAUCK, THEODORE—1877.—Pharmacist in the firm of Theo. Hauck & Co., Columbus Grove, Ohio. Treasurer Penn. Water Co.
- HAUENSTEIN, WILLIAM—1883.—Pharmacist, 375 Amsterdam Ave., and at 598 Columbus Ave., New York.
- HAVENHILL, L. D.—1893.—Phar. M., 1894. Assistant in Pharmacy and Pharmacognosy, University of Michigan, 1893-94. Analytical Chemist with Dr. A. B. Lyons, Honolulu, H. I., until 1896. Assistant Professor of Pharmacy in Kansas School of Pharmacy, Lawrence, Kansas.

- HAWES, GEORGE S.—1890.—Pharmacist, Jackson, Mich.
- HAWES, MARK B.—1898.—With E. T. Webb, pharmacist, Jackson, Mich.
- HAWKS, RICHARD E.—1888.—Pharmacist with Paul O. Finch & Co., Grand Rapids, Mich.
- HAWLEY, EDWIN P.—1879.—M.D., Western Reserve College, 1884. Physician, 2233 Wilson Ave., Cleveland, Ohio. Formerly in practice of pharmacy.
- HAYDEN, BERT L.—1898.—In pharmacy with S. W. Campbell, Belleville, Mich.
- HEARD, MARY K.—1892.—Teacher of Chemistry in Manistee, Mich., 1892-94. In graduate chemical studies, University of Michigan, 1894-95. Northeast, Pa. Cataloguer for State University and Public Libraries of Iowa. Address, 127½ College St., Iowa City, Iowa.
- HEARNE, JOSEPH C.—1891.—Pharmacist in firm of Stamper & Hearne, 49 East Short St., Lexington, Ky.
- HEATH, GEORGE M.—1896.—B.S., Phar., 1900.—Some time a Pharmacist in Milan, Mich. Assistant in Pharmacy, 1898-1900.
- HEATH, ROLLA M.—1889.—In Pharmacy with Gale & Blocki, 34 Washington St., Chicago, Ill.
- HEIM HENRY.—1878.—Pharmacist in the firm of H. & W. Heim (Ph.C. '82). Member of Michigan State Board of Pharmacy. E. Saginaw, Mich.
- HEIM, WILLIAM.—1892.—Pharmacist in the firm of H. & W. Heim (classes of '78 and '82), E. Saginaw, Mich.
- HEIMBACH, SYLVESTER J.—1879.—Pharmacist, Constantine, Mich.
- HEISTER, CYRUS W.—1878.—Pharmacist, Lima, O.
- HENDERSHOTT, FLORENCE EDITH.—1887.—(MRS. FRED J. HENNING. Dec. 19, 1889).—Some time in pharmacy in Manistee, Mich. Address, 691 Third Ave., Detroit.
- HENNING, EDGAR L.—1869.—Banker, Plano, Ill. 76 Burch St., Chicago, Ill.
- HENNING, FRED J.—1887.—Pharmacist, 691 Third Ave., Detroit, Mich.
- HENRY, GEORGE C.—1874.—Pharmacist, 400 Jefferson St., Burlington, Iowa.
- HERZER, HENRY A.—1895.—Some time manager of a pharmacy in Eaton Rapids, Mich. In the study of medicine, Ann Arbor, Mich.

- HESSE, BERNHARD C.—1889.—B.S. (Chem.), University of Michigan, 1893; Ph.D., Chicago, 1896. Chemist in the service of Badische Anilin und Soda Fabrik, of Ludwigshafen, Germany. Wm. Pickardt & Kuttroff, special partner, 128 Duane St., New York City, P. O. box 2885.
- HEWETT, HARRY C.—1899.—Chemist with Weeks Drug and Chemical Co., Jackson, Mich. Address, 259 Wildwood Ave.
- HIBBARD, CLINTON W.—1899.—Pharmacist with Alderton & English, Deckerville, Mich.
- †HICKS, CHARLES Y.—Student in 1874-75. In Literary Department, 1870-72.—Alpena, Mich.
- HICKS, RALPH.—1899.—Pharmacist with Bay & Nordling, Ironwood, Mich.
- HIGGINS, GEORGE E.—1870.—Pharmacist. Now with Anthony Kelly & Co., wholesale grocers, Minneapolis, Minn.
- HIGLEY, WILLIAM K.—1883.—Qualified for graduation with the class of '78. Resident student in the University from '79 to '80. Assistant Professor of Botany and Pharmacognosy in the Illinois College of Pharmacy, Department of Northwestern University. Lecturer on Structural and Physiological Botany in Beloit College. 711 Warren Ave., Chicago, Ill.
- HILL, CHARLES OTIS—1893.—A.B., University of Tennessee. Instructor in Pharmacy and Assistant Chemist, U. S. Food Investigations at the University of Tennessee. Address, 1008 Rose Ave., Knoxville, Tenn.
- HILTON, GEORGE D.—1900.—In pharmacy in Springport, Mich.
- HIRTH, GEORGE J.—1889.—M.D., this University, 1891. Univ. of Berlin, 1892. Physician, Milwaukee, Wis. Professor Hygiene and Assistant to Chair of Clinical Medicine of the Milwaukee Medical College and School of Dentistry.
- HIRTH, PAUL H.—1886.—Commercial agent for John Wyeth & Bro., Philadelphia, Pa. Address, 101 Summit St., Toledo, Ohio.
- HITCHCOCK, FRANK C.—1896.—Pharmacist with E. H. Haag, (Ph.C., 1892.), 601 Monroe St., Toledo, Ohio. In graduate studies in this school until Feb. 1900. Holder of the Fred Vogel Jr. Fellowship in Physiological Chemistry, Univ. of Wis., Madison, Wis.
- HITCHCOCK, HENRY C.—1900.—Pharmacist, Plattsburg, N. Y.
- HITCHCOCK, JOHN E.—1891.—Pharmacist, in "Medical Hall," Plattsburg, New York.

- HOEHN, JOHN—1882.—Some time Pharmacist, Cobb & Bradley's Euclid Ave., Block, Cleveland, Ohio. Professor of Chemistry and Pharmacology, Dumbham Medical College and National Medical University. Address 3724 Lake Ave., Chicago, Ill.
- \*HOFFMAN, ADOLPH GUSTAVE—1884.—Died, Oct. 8, 1887, at Hot Springs, Arkansas. In 1886-87 a pharmacist in the firm of Lemly & Hoffman, Hot Springs.
- HOGUE, WILMER B.—1884.—M.D., University of Michigan, 1886. Physician, and Surgeon, Local Surgeon Union Pacific R. R., Grand Island, Neb.
- HOGREFE, LOUIS T. W.—1897.—Analytical Chemist in charge of Analytical Research Laboratory, Allen Pfeiffer Chem. Co., St. Louis, Mo. Admitted to the Bar by the Supreme Court of Mich., June, 1895. U. S. District Court, Fort Smith, Ark., March, 1898.
- HOLLAN, LEGRAND H.—1869.—M.D., University of Michigan, 1869. Pharmacist, Herkimer, N. Y.
- \*HOLLIS, CHARLES WILLIAM—1890.—Entered Department of Medicine and Surgery, University of Michigan, October, 1890. Died in March, 1891.
- HOLLOWAY, WILLIAM J.—1876.—Pharmacist in firm of W. J. & L. L. Holloway, Hasting Mich. In 1875-76 assistant in analytical chemistry in University of Michigan.
- HOLTHOEFER, HERMAN J.—1883.—Pharmacist, 3160 State St., Chicago, Ill.
- \*HOOD, CHARLES H.—1869.—Pharmacist. Died, Feb. 22, 1873, at Holly, Mich.
- HOPPER, ARTHUR G.—1883.—Pharmacist and manager with James E. Field & Co., Alpena, Mich.
- HOPPER, CHARLES H.—1875.—A pharmacist for some time at Chattanooga, Tenn. In the firm of Ayers & Hopper, Surveyors, Cherry Grove, Ohio.
- \*HORINE, DORSEY P.—1888.—Formerly pharmacist with W. C. Scupham, 63 State St., Chicago, Ill. At Michael Reese Hospital, Chicago. Died, Feb. 21, 1899.
- HORNE, WARREN W.—1900.—In Pharmacy with his father, Fayetteville, N. C.
- HORTON, CHARLES R.—1896.—With F. W. R. Perry, (Ph.C., 1880.), 709 Woodward Ave., Detroit, Mich.
- \*HOSACK, HARRY E.—1883.—Pharmacist, Fredericktown, Ohio. Died, Nov. 8th, 1890, at Frederickton, O.

- HOUGHTON, ELIJAH M.—1893.—M.D., University of Michigan, 1894. Assistant in Pharmacology, this University, 1894-95. Chief Pharmacologist in the biological department in the manufacturing laboratory of Parke, Davis & Co., Detroit, Mich.
- HOUGHTON, PHILIPS S.—1879.—In the firm of P. S. Houghton, general merchandise, and the Houghton Farming Co., Galesburg, Dakota. Previously a pharmacist in Dakota.
- HOWELL, CORNELIUS C.—1870.—For some time a pharmacist in Aurora, Ill., and then a wholesale druggist in St. Louis, Mo. After 1876 engaged in mining engineering in Colorado. (?)
- HOWER, PHIL G.—1892.—Sandusky, Ohio. Salesman for the Woodward Medicine Co., Buffalo, N. Y., and Toronto, Ont.
- HUBBARD, FRANK J.—1877.—M.D., University of Michigan, 1879. Dealer in grain and wool, Galesburg, Mich. In the practice of pharmacy until 1884, Battle Creek, Mich.
- HUBBARD, JOHN L.—1891.—In the firm of Clark & Hubbard, Pharmacists, Grass Lake, Mich. Out of business at present on account of poor health. Address, Waterloo, Mich.
- HUBBARD, THOMAS H.—1882.—M.D., Univ. Penn, 1885. In professional studies in Europe in 1887. Physician, 205 Ontario St., Toledo, Ohio. Laryngologist, Tolero and St. Vincent Hospital.
- †HUBER, ARTHUR M.—Student in 1893-94.—Chemical manufacturer, Monticello, Toledo, Ohio.
- HUBER, LEWIS H.—1890.—Pharmacist with Anglemyre & Buckley, Ottawa, O.
- HUDSON, CHARLES H.—1874.—Pharmacist, Marcellus, Mich.
- HUDSON, HARRY H.—1894.—Pharmacist, Colorado Springs, Col.
- HUEBER, CHARLES F.—1884.—Pharmacist, 602 Water St., Port Huron, Mich.
- HUESTED, FRANK P.—1891.—For some time Chemist for the New York State Board of Health, Albany, N. Y. Professor of Chemistry and Science in Albany High School.
- HUHN, CHARLES H.—1881.—Pharmacist, cor. Western and Lindale Ave., also commercial pharmacist with Lyman Eliel Drug Co., 208 Western Aves., Minneapolis, Minn.
- HUMISTON, KENT P.—1877.—Pharmacist and proprietor of Grove Drug Store, 546 Lorain St., Cleveland, Ohio.
- †HUNKEL, CARL G.—Holder of the Stearns Fellowship of Research in 1898-99.—Ph.G. and B.S., Univ. Wis. Professor of Pharmaceutical Chemistry in the School of Pharmacy of Northwestern University.

- HUNTINGTON, HENRY N.—1874.—Pharmacist with Joseph Fleming & Son, Pittsburg, Pa.
- HUNTSMAN ALBERT.—1874.—Pharmacist, Hebron, Neb.
- ILHARDT, WILLIAM K.—1890.—Ph.G., St. Louis Coll. Phar., 1888. Pharmacist, 4836 Delmar Boul. Demonstrator in Microscopy, St. Louis Coll. Phar.
- IRWIN, JOHN L.—1880.—M.D., University of Michigan, 1889. From 1880 to 1887 manufacturing chemist with the Wm. S. Merrill Chemical Co., Cincinnati, Ohio. In 1879–80 Assistant in Operative Pharmacy in the University of Michigan. In 1889–90 in medical studies in Vienna. Health Commissioner of Detroit since 1899. Physician, 230 Third St., Detroit, Mich.
- JACKMAN, WILBUR F.—1887.—B.S., University of Michigan, 1886. Pharmacist, corner of Michigan Ave. and Fifth St., Detroit, Mich., until 1895. Professor of Pharmacy in Maine State College, Orono, Maine.
- JACKSON, CHARLES E.—1893.—M.D., Jefferson Medical College, 1899. For some time Chemist with W. S. Merrill & Co. Hospital Resident in St. Joseph Hospital until July 15, 1900.
- JACKSON, GEORGE R.—1892.—A.B., Oberlin College. Pharmacist. 111½ Braler St., Memphis, Tenn., until September, 1894. Professor of Chemistry in Collegiate Department of St. Augustine School, Memphis.
- JAMES, HENRY F.—1876.—Formerly Pharmacist, Third and Linden Ave., Dayton, Ohio. Agent of the National Cash Register Co., 6 Mich. Ave., Detroit, Mich.
- JANNEY, RUSSELL L.—1889.—Pharmacist. Eagle Pharmacy, Paso Robles, San Luis, Obispo Co., Cal.
- \*JARMAN, ERNEST M.—1890.—Pharmacist with the Tooth Theatre Pharmacy, corner Fifth and Francis Sts., St. Joseph, Mo. Died in St. Joseph, Mo., Sept. 20, 1899.
- JARVIS, JOHN W.—1869.—M.D., University of Michigan, 1869. Formerly at Erie, Pa. Waterford, Pa.
- JENSEN, PAUL C.—1879.—M.D., University of Michigan, 1882. In the practice of Pharmacy until 1880. Physician and Surgeon, Manistee, Michigan.
- JENTER, CHRISTIAN G.—1889.—Graduate Student in Metallurgical Chemistry, 1889–90. Assistant in Quantitative Analysis, 1890–91. Chemist at the New York State Agricultural Experiment Station, Geneva, N. Y.

- JEWETT, HENRY S.—1870.—B.A., 1868; M.D., 1870, University of Michigan. Assistant in Analytical Chemistry, 1868–70. Resident in Berlin and Vienna, 1872–74. Donor of the “Adams-Jewett Botanical Collection” of the University. Physician, 21 S. Ludlow St., Dayton, Ohio. Surgeon of St. Elizabeth Hospital.
- JOHNSON, BURT L.—1889.—Some time Pharmacist for W. H. Severance, Middleville, Michigan. Enlisted for the war with Spain. In Military Hospital, Washington, D. C.
- \*JOHNSON, CALVIN S.—1875.—Pharmacist, Carthage, Ohio. Died April 1, 1896.
- JOHNSON, CHARLES W.—1896.—B.S., Phar., 1900. Some time with A. L. Walker, Ph.C., 1879, 415 Woodward Ave., Detroit, Mich. Now Assistant Instructor in Qualitative Chemistry in this University.
- \*JOHNSON, JOHN S.—1877.—Formerly Pharmacist in the firm of J. S. Johnson & Co., Hudson, Wis., (in company with E. E. Gatchell, Ph.C., 1881), also druggist in Newark, Ohio. Died May 22, 1891.
- JOHNSON, MARION ELIZA.—1877.—Formerly Apothecary in the New England Hospital for Women and Children, Boston, Mass. Address Schenectady, N. Y.
- JOHNSON, OTIS C.—1871.—B.A., Oberlin, 1868; A.M., 1877. Professor of Applied Chemistry in the University of Michigan.
- JOHNSTON, JOSEPH J.—1877.—In grain culture, Westfield, N. Y.
- JONES, ALFRED A.—1882.—Pharmacist in the firm of Jones & Panches, Elkhart, Ind.
- JONES, GERTRUDE.—1874.—MRS. GERTRUDE J. CUSCADEN.—M.D., University of Michigan, 1874. Physician, 1715 Dodge St., Omaha, Nebraska.
- JONES, JOHN H.—1894.—Pharmacist, ½ Oak St., Evansville, Ind.
- JONES, JOHN R.—1870.—M.D., University of Michigan, 1872. Assistant in Chemical Laboratory, 1871–72. Physician, 2299 Gratiot Ave., Detroit, Mich.
- JONES, MERVIN A.—1887.—Pharmacist with Alsdorf & Son, 213 S. Kerr St., Lansing Mich.
- JOSEPHANS, REINHARDT J. C.—1882.—Pharmacist, 242 W. North Ave., Chicago, Ill.
- JUDSON, FRANK E.—1880.—Pharmacist in the firm of Judson Brothers, Brighton, Mich.
- JUDY, JOHN N.—1895.—The Queen City Pharmacy, Cumberland, Md.
- KAHN, HARRY.—Phar, M., 1891.—Ph.G., Illinois College of Pharmacy, 1889. M.D., Rush Medical College. Some time Assistant in Pharmacy in the Illinois College of Pharmacy, Chicago, Ill.

- †KAWAMURA, MESATO.—Student in 1886-87.—Japan.
- KEBLER, LYMAN F.—1890.—B.S., Chem., University of Michigan, 1891; M.S., 1892. Assistant in Qualitative Chemistry, 1890-92. Chief Chemist with Smith, Kline & French Co., Philadelphia, Pa. First Vice-president, Chemical Section Franklin Institute. Member of the Committee on Awards, National Export Exposition.
- KEITH, FRANKLIN R.—1889.—Pharmacist, Port Arthur, Texas.
- †KELLY, EDWIN V.—Student in 1894-95; in Literary Department 1891-93.—Shipper of Dried Fruits and Raisins, Fresno, Cal.
- KELLY, JOHN P.—1879.—M.D., Michigan University, 1881. Physician and Pharmacist, Golden, Colorado.
- \*KELLY, MARTIN C.—1871.—M.D., University of Michigan, 1875. Physician, Mount Clemens, Mich. Died at home Dec. 22, 1898.
- KELLY, WILLIAM A.—1892.—Pharmacist with W. W. Kelly, Ottawa, Ohio.
- KENNEDY, EDWARD M.—1891.—Pharmacist, 104 West Main St., Kalamazoo, Mich.
- KENNEDY, EZRA J.—1882.—Pharmacist with F. W. R. Perry (Ph.C., 1880), 707 Woodward Ave., Detroit, Mich., until 1892. Professor of Pharmacy in Detroit Medical College from 1891 to 1894. Pharmaceutical Editor of "The Pharmaceutical Era," 396 Broadway, New York.
- KEPHART, PHILIP.—1899.—Pharmacist with Henry Kephart, Berrien Springs, Mich.
- KERLEY, ABRAM P.—1877.—Pharmacist and Chemist in the firm of A. P. Kelly & Co, 2035 Broadway, New York. Member of Michigan University Club of New York City.
- KIDDER, SAMUEL, JR.—1888.—Formerly Pharmacist with E. E. Scholtz, Denver, Col. Later Assayer and Chemist, Portland Gold Mining Co., Cripple Creek, Col. Address 117 So. Water St., Chicago, Ill.
- KING, JOSEPH C.—1891.—Formerly in the firm of Brewster & King, Lake Placid, New York. With the Equitable Life Insurance Co., 44 Crocker Building, San Francisco, Cal.
- KIRBY, MAURICE S.—1890.—Wholesale dealer in fish, Grand Haven, Mich.
- KIRBY, THOMAS E.—1890.—Some time in Pharmacy with H. J. Milburn & Co., Detroit, Mich. In the firm of Kirby Chemical Co., Grand Haven, Mich.
- KIRCHGESSNER, WILLIAM C.—1889.—Manager of Prescription and Manufacturing Department for Peck Bros., Monroe St. Grand Rapids, Michigan.



- KIRCHMAIER, GUSTAVUS A.—1883.—Graduate student in the University in 1884-85. Analytical Chemist. City Chemist. State Chemist to Ohio Dairy and Food Commission. Address Adams and Huron Sts., Toledo, Ohio.
- KIRK, DAVID.—1877.—M.D., Detroit College of Medicine, 1888. LeSueur, Minn.
- KLEIN, EDWARD N. E.—1900.—With August Hartz, Pharmasist, College Point, N. Y.
- KLEIN, JULIUS M.—1892.—Representing F. Stearns & Co., of Detroit, in Missouri and Kansas. Address Chelsea, Mich.
- KLINGMAN, THEOPHIL.—1890.—M.D., University of Michigan, 1892. Physician, 526 S. Ashley St., Ann Arbor, Mich. Pathologist of Michigan State Asylums for the Insane, and Assistant in Diseases of the Nervous System and Mind, University of Michigan.
- KNAPP, EDGAR L.—1895.—Some time with Doak & Orrison, Springport, Mich. (?)
- KNAPP, LOUIS B.—1881.—Analytical Chemist in Denver, Col., in 1882. In practice of Pharmacy at Danbury, Neb. (?)
- KNAPP, VICTOR.—1877.—M.D., Ohio Medical College, 1881. For some years in the practice of Pharmacy. Physician, Ferdinand, Ind.
- KNOX, JAMES W. T.—1891.—In 1895-97 the holder of the Stearns Fellowship of Research in University of Michigan. In the Scientific Department of Frederick Stearns & Co., Detroit, Mich., and Editor of "The New Idea." Assistant Professor of Organic Chemistry in the Department of Pharmacy of the Detroit College of Medicine.
- KNOX, SAMUEL R.—1894.—Pharmacist in the firm of Boyd & Knox, Paoli, Ind.
- \*KOEHNLE OSCAR H.—1878.—For years a Pharmacist at Sixth and Market Sts., St. Louis, Mo. Died in Ocala, Florida, June 25, 1888.
- KOON, CHARLES S.—1887.—President of the Central Drug Store Co. Muskegon, Mich.
- KOONS, CHARLES W.—1879.—Pharmacist, Canton, Ohio.
- KRAMER, LEONARD G.—1889.—Pharmacist, Michigan City, Ind.
- \*KRAUSE, BENJAMIN S.—1887.—Pharmacist with James A. Taylor, Detroit, Mich. Died Dec. 15, 1890, at Ann Arbor Mich.
- KREMERS, WILLIAM.—1898.—In Graduate Studies in University, until April, 1899. Some time in Pharmacy. Chemist with the Holland Sugar Co., Holland, Mich.
- KRUG, WILLIAM H.—1889.—Assistant Chemist in the U. S. Department of Agriculture, Washington, D. C. Secretary of the Washington Section of Am. Chemical Society.

- \***KUHLMAN, ELI.**—1874.—In the firm of Kuhlman & Co., Pharmacists, Garrett, Ind., until 1880; afterward in New Ulm, Minn. Died Nov. 24, 1883, in Canton, Ohio.
- LAKE, CHARLES N.**—1884.—M.D., Harvard 1895. Some time Instructor in Qualitative Analysis and Assaying in Lehigh University, South Bethlehem, Pa. From 1883 to 1885 Manufacturing Chemist with the house of W. H. Schieffelin & Co. Physician, 538 Baker St., Detroit, Mich.
- LANDERS, ALFRED E.**—1892.—Pharmacist with Dr. Propeck, 362½ W. Randolph St., Chicago, Ill.
- LAUER, BENJAMIN J.**—1885.—Pharmacist, 2430 Eighth Ave., Cor. 130th St., New York City.
- \***LEAMON, GEORGE P.**—1884.—M.D., Jefferson Medical College, 1887. In the Practice of Medicine, Yankton, S. Dakota. Died in Lena, Ill., Oct. 19, 1894.
- LEDMAN, OLIVER S.**—1883.—Manufacturing Chemist in charge of Laboratory of Meyer Brothers Drug Co. St. Louis, Mo.
- LEFEVRE, EDWARD L.**—1883.—Manufacturing Pharmacist with J. W. Biedelman, 216 Main St., Little Rock, Arkansas.
- LEISENRING, WILLIS.**—1887.—B.S., Michigan Agricultural College, 1894. Pharmacist in the firm of Smith & Leisenring, 14 N. Saginaw St., Pontiac, Michigan.
- LEIST, JACOB L.**—1875.—Pharmacist, 2502 West Michigan St., Indianapolis, Ind.
- LEVY, HENRY.**—1888.—Treasurer of the Baker-Levy Chemical Co., Omaha Building, Chicago, Ill. Deputy State Treasurer of Indiana.
- \***LEVY, MORITZ M.**—1890.—Some time a Pharmacist at Charlotte, Mich. Died June 2, 1891.
- LEWIS DENSLOW.**—1877.—M.D., University of Michigan, 1878. Physician, 5100 Madison Ave., Chicago, Ill. Surgeon to Cook Co. Hospital, 1892. Special Commissioner from Ill. State Board of Health Dept. of Chicago, for the investigation of municipal sanitation in European cities. Professor of Gynæcology in the Chicago Policlinic.
- LEWIS, I. G.**—Phar. M., 1891.—Department L. S. A., 1864–67. Robert Stevenson & Co., (Robert Stevenson, I. Giles Lewis, Arthur Dawson,) wholesale druggists, 92 Lake St., Chicago.
- LILLY, EUGENE A.**—1880.—Insurance Agent, Minneapolis, Minn.
- LITTLE, JOHN R.**—1876.—Pharmacist in charge until 1889. Book-keeper Phœnix Nursery. Secretary Sennett Enamel Cream Co., Bloomington, Ill.

- LOBB, ARTHUR S.—1877.—Pharmacist, Main St., Frankfort, Mich.
- LOCKWOOD, WILLIAM S.—1887.—Some time in Pharmacy. Now Grocer in firm of Collins & Lockwood, Coldwater, Mich.
- LOGAN, ROBERT.—1879.—M.D., University of Michinan, 1876; M.D., College Physicians and Surgeons, New York, 1877; Coll. Physicians and Surgeons, Edinburg, Scotland, 1879. M. R. C. S., London, Eng., 1883. Physician, Ionia, Mich.
- LOHMAN, GEORGE H.—1870.—Pharmacist in the firm of G. H. Lohman & Co., Kendallville, Ind.
- †LOHRSTORFER, GEORGE E.—Student in 1894-96.—Pharmacist, Port Huron, Mich.
- LOHRSTORFER, JOSEPH.—Pharmacist, 901 Military St., Port Huron, Mich.
- LONG, WILLIAM L.—1877.—M.D., Pulty Medical College, Cincinnati, Ohio, 1890. Health Officer, New Haven Township. Physician, New Haven, Ohio.
- LONGSTAFF, CHARLES H.—1882.—Pharmacist in the firm of Dunning & Longstaff, Huron, S. Dakota.
- LONGWELL, EDGAR B.—1882.—Pharmacist, Paw Paw, Mich.
- LONGSTORF, GEORGE J.—1880.—Graduate Student in 1881-82. Chemist for Iron Stock and Mining Properties. Mining in Alaska, Michigan and Minnesota, Address 2301 Grand Ave., Milwaukee, Wis.
- LOOMIS, JOHN H.—1881.—Manufacturing Chemist with the Richardson Drug Co., Omaha, Neb.
- LOUDENBECK, HARRY C.—1891.—Chemist and Metallurgist with the Gates Iron Works. Address, 650 Elston Ave., Chicago, Ill.
- LOVIN, CLYDE C.—1881.—M.D., University of Michigan, 1884. U. S. Examining Surgeon, Physician and Pharmacist. Health Officer of Kearney County, Lakin, Kansas.
- LUPINSKI, HUGO.—1878.—M.D., University of Michigan, 1882. Physician, Grand Rapids, Mich. From 1882 to 1887 the Assistant Demonstrator of Anatomy, University of Michigan. Formerly in the practice of Pharmacy.
- LUTES, JOHN W.—1897.—Pharmacist with E. G. Gleason, Richmond, Mich.
- †LYONS, ALBERT B.—M.A., Williams College; M.D., University of Michigan, 1868. F. C. S., London. Some time Professor of Chemistry in Oahu College, H. I. Nelson Baker & Co., Manufacturing Pharmacists, Detroit. 72 Brainard St., Detroit.

- LYNN, JAMES.—1886.—Formerly a Pharmacist in the firm of Lynn & Leedy, dealers at wholesale and retail, Wabash, Ind. Manager of the Wabash Church and School Co.; President Wabash Bridge & Iron Works; Secretary and Treasurer Wabash Electric Light Co.
- MAAS, FRANK N.—1880.—Humbolt, L. S.
- \*MACKIMMIE, WILLIAM.—Pharmacist in the firm of G. & W. MacKimmie, 29 Jefferson Ave., Detroit, Mich. Died October 16, 1894.
- MALLET, ELGIN.—1895.—Pharmacist with Nelson Mallett, Trenton, Mo.
- MALTBIE, WILLIAM F.—1869.—M.D., University of Michigan, 1869. Physician, Xenia, Ind. (?)
- MANN, ALBERT.—1880.—Pharmacist in the firm of Mann Brothers, Ann Arbor.
- MARSH, FAY M.—1895.—In Pharmacy with E. C. Haynes, Division, Mich.
- \*MARSHALL, EDWARD H.—1887.—Died Nov. 9, 1887, at Indianapolis, Ind. Had been engaged with Geo. W. Sloan & Co., Pharmacists, Indianapolis.
- MARSHALL, ENOCH S.—1880.—Pharmacist, 2301 Independence Ave., Kansas City, Mo.
- MARTIN, JOHN R.—1900.—In Pharmacy in Monroe, Mich.
- MARTZLOFF, CHARLES E.—1890.—Pharmacist, 367 William St., Cor. Jefferson, Buffalo, N. Y. Member of the Empire State Drug Co.
- MASSEY, FRANK W. H.—1876.—M.D., University City of N. Y., 1884. Physician, Brownville, N. Y. Address care Q. M. D. Santiago, Cuba.
- MASSEY, SOLON F.—1871.—Graduate of West Point U. S. Military Academy, 1877; of U. S. Artillery School, Fortress Monroe, 1886. First Lieut. 5th Regt. U. S. Artillery. In 1881-82 acting Assistant Professor of Mathematics at West Point Academy.
- MAXWELL, JOHN C.—1894.—M.D., 1895. Physician, Paw Paw, Mich.
- \*MC CARTHY, RUFUS H.—1873.—B.A., Notre Dame, 1871; M.D., University of Michigan, 1874. Physician, Washington, D. C. Not living.
- †MCCOOMBS, FRED C.—Student in 1890-92.—Assistant Superintendent Ohio Iron and Steel Co., Lowellville, Ohio.
- MCCREA, HENRY F.—1881.—Pharmacist, Cor. 17th and Champa Sts. Denver, Col.
- MCCRILLES, JAMES E.—1885.—Pharmacist, Cor. Main and Fayette Sts., Fayette, Ohio.

- \*MCCULLOCH, ROLLIN S.—1880.—Pharmacist in the firm of McCulloch & Son, Fremont, Ohio. Member of the Ohio State Pharmaceutical Association. Died March 3, 1892.
- MCGEE, THOMAS H.—1891.—Pharmacist, Farmington, Mich.
- MCGREGOR, JAMES C.—1894.—Pharmacist with W. H. Burke (Ph.C. 1884), 291 Woodward Ave., Detroit, Mich.
- MCGUIRE, BEN J.—1890.—Pharmacist, Elm St., Trenton, Mo.
- MCNEIL, MARY.—1882.—MRS. JOHN O. REED.—B.L., University of Michigan, 1885. Some time teacher in the High School at East Saginaw. Address Ann Arbor, Mich.
- \*MCNOAH, GRACE E.—1894.—Graduate Student, 1894-96. Died in Sierra Madra, Cal., December 14, 1896.
- MEAD, ALLEN H.—1894.—Pharmacist with J. Adams Smith, 69 Woodland Ave., Cleveland, Ohio. Also in the study of Medicine in Cleveland College of Physicians and Surgeons.
- MEHLHOFF, FRED W.—1889.—Salesman for the Diamond Glue Co., 422-218 La Salle St., Chicago, Ill.
- MEINERT, GERHARD.—1886.—Pharmacist, Corner Adams and 12th Sts., Toledo, Ohio.
- MELCHER, ADOLPH B.—1881.—Pharmacist for Alfred Backdahl, 313 Washington Ave., South, Minneapolis, Minn.
- MELVILLE, JAMES E.—1885.—Pharmacist in the firm of Melville Bros. Lieutenants-Adjutant Sixth Ohio, U. S. V., Spanish-American War.
- MEREDITH, ELMER E.—1882.—Ph.B., Ohio Wesleyan University. Pharmacist in the firm of Meredith & Damon until Dec. 1, 1894. Treasurer of New Spencer Medicine Co., Chattanooga, Tenn, until 1900. In the firm of Meredith & Croninger, Drain Tile Manufacturers. Hartford, Ind.
- MERELL, ASHER F.—1871.—Formerly in firm of Merell & Ryan, St. Paul, Minn. Cashier Mutual Life Association, LaSalle St., Chicago, Illinois.
- \*MERELL OTIS A.—1870.—Until 1881 a Pharmacist at 453 Grand River Ave., Detroit. Died at Owosso, October 18, 1894.
- MERKEL, CHARLES W.—1893.—Pharmacist, Brookfield, Mich.
- MERRITT, FRED D.—1880.—Pharmacist and Analytical Chemist, Strawberry Point, Iowa.
- MESSINGER, GERRY W.—1895.—Pharmacist for the Valley City Drug Co., 196 E. Bridge St. Grand Rapids, Mich.
- METZGER, CARL.—1899.—Pharmacist with B. M. Dodds, Corner Sixth and Capital Ave., Springfield, Ill.

- MEYER, OTTO P.—1890.—Manufacturing and Analytical Chemist in charge of the Laboratory of Meyer Bros. Drug Co., importers and wholesale druggists, Broadway, Clark Ave., and Fourth St., St. Louis, Mo.
- MEYER, THEODORE F.—1878.—Manager and first Vice-President of Meyer Bros. Drug Co., importers and wholesale druggists, Clark Ave., 4th St. and Broadway, St. Louis, Mo.
- MILLER, EMERSON R.—1892.—Phar. M. 1893—B.S., (Chem.), University of Michigan, 1894; M.S., 1895. Professor of Pharmacy, Alabama Polytechnic Institute, Auburn, Ala.
- MILLER, JOHN J.—1878.—M.D., Homœopathic Medical College University of Michigan, 1880. Physician, San Jose, Cal.
- MILLER, THOMAS W.—1886.—Pharmacist in the firm of Miller & Vernaz, 134 W. Pine St., Warrensburg, Md.
- \*MILLS, CHARLES W.—1870.—Pharmacist in the firm of Mills, Lacy & Dickinson, Grand Rapids, Mich. Secretary of the Honduras Fruit Company. Died May 1892, at Tella, Honduras, Central America.
- \*MILNER, THOMAS J.—1890.—Pharmacist, Big Rapids, Mich. In graduate studies University of Michigan, 1894–95. Died June 15, 1898,
- MINER, MAURICE A.—1871. Phar. M. 1897.—Professor of Pharmacy, School of Pharmacy, Northwestern University, 2421 Dearborn St., Chicago, Ill.
- MITCHELL, ANDREW S.—1887.—Analytical Chemist. Professor of Chemistry in the Milwaukee Medical College. State Chemist in Wisconsin. Address 220 Greenbush St., Milwaukee, Wis.
- †MOGH, ADOLPH G.—Student in 1894–95.—Pharmacist, Lake Lindon, Mich.
- MOODY, LUCIUS W.—1878.—Analytical and Manufacturing Chemist. Proprietor of Moody's Pharmacy, Portland, Oregon. President Oregon State Pharmaceutical Association, 1899.
- MOORE, LUMAN G.—1869.—M.D., Long Island College Hospital, 1873. Physician and Pharmacist, Kinsman, Ohio.
- MOORE, SAMUEL S.—1871.—Solicitor, 326 Jefferson Ave., Grand Rapids, Mich.
- MORGAN, JAMES W.—1876.—For some time a Pharmacist with R. Hall, Three Rivers, Mich.; afterwards Chemist for Lead and Zinc Mines, Carl Junction, Mo. In the firm of Earl & Morgan Co., Exporters and Importers Agents, San Diego, Cal.
- MORRIS, GEORGE A.—1893.—Some time with Parkinson & Parkinson, Pharmacists, Saginaw, W. S., Mich. With the West Chemical Co. Address 246 Harrison Ave., Detroit, Mich.

- \*MORRIS, JOHN E.**—1882.—Died Sept. 18, 1882, at Bluffton, Ohio.
- MORSE, ERNEST H.**—1881.—Manager for G. R. Smith, Pharmacist, 238 Harrison Ave., Detroit, Mich.
- MORSE, OLNEY R.**—1899.—Pharmacist in the firm of Chapel & Morse, Charlevoix, Mich.
- MOSS, JOHN R.**—1879.—Pharmacist in the firm of Moss & Potts, Rocheport, Mo.
- MOSS, JOSEPH. C.**—1875.—Pharmacist, Ellensburg, Washington.
- †MOSS, LEROY H.**—Student in 1892-93.—Pharmacist, Middleton, Mich.
- MUIR, JOHN D.**—1884.—Muir & Co., Druggists, 73 Monroe St., Grand Rapids, Mich.
- \*MULL, ROBERT F.**—1879.—A.M., Mercersburg College. Cashier First National Bank, Philipsburg, Pa. Formerly a Pharmacist. Died Dec. 14, 1895.
- MUMMERY, ARTHUR E.**—1885.—Pharmacist, Corner Washington and Fourth Ave., Ann Arbor, Mich.
- MURDOCK, THOMAS E.**—1894.—Pharmacist in the firm of Murdock Bros, 62 Main St. Northville Mich.
- MURRAY, BENJAMIN L.**—1891.—B.S., (Chem.), University of Michigan, 1896. B.S., (Phar.), 1897.—Chemist and Bacteriologist, Merck & Co. 13-19 University Place, New York City.
- NEAL, JAMES C.**—M.D., University of Michigan, 1869. Entomologist and Botanist, Florida Experiment Station; Professor of Entomology in Fla. State Agr. Col., Lake City, Florida.
- NEWMAN, ISAAC N.**—1879.—Manager The Brown Pharmacy Co., 110 Woodward Ave., Detroit, Mich.
- NEWTON, WELLES B.**—1893.—Pharmacist in the firm of Newton Bros., Findley, Ohio.
- \*NEWTON, WILLIAM E.**—1870.—For some time a Pharmacist in charge for William Blake, Tioga Center, N. Y. Died February 24, 1886, at Tioga Center.
- NICHOLS, CLARA E.**—1897.—Chemist at Soldiers' Home, Grand Rapids, Mich.
- NICHOLS, MARION F.**—1894.—Some time chemist for Wallin Leather Co., Grand Rapids, Mich. Chemist with Upjohn Pill & Granule Co., Kalamzoo, Mich.
- NICKERSON, FREDERICK H.**—1893.—Pharmacist, Greenwich, Ohio.
- NIERMANN, HERMAN G.**—1890.—M.D.. University of Michigan, 1892. Physician, 88 Calhoun St., Fort Wayne, Ind.

- NISBET, ROBERT J.—1896.—Manager for R. A. Shaw Drug Co., San Marcial, New Mexico.
- NIVLING, WALTER A.—1897.—In 1898-99 Assistant in Qualitative Chemistry in this University. Chemist for the United Starch Co., (Sioux City Branch), Sioux City, Ia.
- NOLL, MATTHIAS.—1881.—Pharmacist, 627 Commercial St., Atchison, Kansas.
- NOLL, WILLIAM H.—Pharmacist with B. R. Noll, 10 E. Columbia St., Fort Wayne, Ind.
- NORTH, SAMUEL J.—1885.—With Willets Drug Co., Augustus, Ga.
- OAKS, JOHN F.—1869.—M.D., College of Physicians and Surgeons, New York, 1871. Oculist and Aurist to the Englewood Union Hospital. Professor Otology Harvey Medical College. Suite 1202, 126 State St., Chicago, Ill.
- \*OBERMANN, RICHARD F.—1883.—Died Feb. 21, 1884, at Milwaukee, Wis. Was engaged in Pharmacy after his graduation.
- O'BRIEN, AUGUSTUS.—1900.—In Chemistry, Bessemer, Mich.
- O'CONNOR, DELIA.—1894.—Pharmacist with Parkinson & Parkinson, Saginaw, W. S., Mich.
- OECHSLER, ALBERT.—1888.—Resident Graduate in 1888-89. Chemist for Iron and Steel, with National Refining and Smelting Co., So. Chicago, Ill.
- \*OLES, FRANKLIN R.—1882.—Analytical Chemist and Mineralogist, Loughridge, Murray Co., Ga. Died near Spring Place, Ga., about 1894.
- ORTH, LOUIS P.—1899.—Pharmacist, Wayne, Neb.
- OSBORNE, DANIEL E.—1879.—M.D., University of Michigan, 1884. Student in the Department of Literature from 1879 to 1881. Physician. Some time in the service of American Board of Foreign Missions in China. Address, care of the U. S. Consul, Tien Tsin, China.
- OSTRANDER, EDWIN J. F.—1896.—Pharmacist for Grace Hospital, Detroit, Mich.
- †OSTRANDER, JAY B.—Student in 1890-91.—Pharmacist, West Bay City, Mich.
- \*OSTRANDER, REISDORF H.—1883.—Pharmacist, Monroe, Mich. Died at Monroe, Feb. 8, 1898.
- PALMER, GEO. H. M.—1882.—Some time Pharmacist at Bellefontaine, Ohio. Insurance Agent, Kenton, Ohio.



- PALMER, HENRY.—1885.—M.D., University of Michigan, 1887. In the firm of Palmer & Buck, Registered Pharmacists. Physician, St. Johns, Mich.
- PALMER, WALLACE.—1890.—Some time in Pharmacy in Ann Arbor. Assistant Chemist for Peninsular Sugar Refining Co., Caro, Mich. Summer residence, Benton Harbor, Michigan. U. S. Vol. Spanish-American War,
- PARKER, ARTHUR S.—1879.—Pharmacist, 747 Woodward Ave., Detroit, Mich. Also representing Park, Davis & Co. in Detroit.
- PARKER, CHARLES E.—1885.—Chemist and Foreman of Seabury Pharmaceutical Laboratories, East Orange, N. J.
- PARKER, FRANK C.—1881.—Formerly Pharmacist in the firm of Montgomery & Parker. General Sales Agent for White Rock Water in United States and Canada. 1456 Hampshire St., Quincy, Ill.
- PARKER, ROLAND J.—1885.—Pharmacist, Monett, Mo.
- †PARKER, WALTER A.—Student in 1894-95.—Pharmacist, Denver, Col.
- PARKHILL, STANLEY E.—1877.—Pharmacist, Owosso, Mich. For some years member of the State Board of Pharmacy.
- PARKINSON, FERDINAND E.—1889.—Chemist and Pharmacist in the firm of Parkinson & Parkinson, Wholesale and Retail Druggists, Saginaw, W. S., Mich.
- PARROTT, BURTON E.—1881.—Manager of the firm of Parrott-Taggart Bakery of the National Biscuit Co., Indianapolis, Ind. Previously Pharmacist in Indianapolis.
- PARSONS, CHARLES W.—1881.—In 1880-82 Assistant Chemist U. S. Department of Agriculture. From 1883 to 1887 the Professor in Analytical Chemistry in the New York College of Pharmacy. In 1892-93 Manufacturing Chemist W. H. Schieffelin & Co.. Editor of the Pharmaceutical Era, 399 Broadway, New York, N. Y.
- \*PARSONS, HENRY B.—1876.—Phar. M., University of Michigan, 1885. Assistant in Pharmacy in the University of Michigan, 1876-77 and 1877-78. In 1878-81 Assistant Chemist in the Department of Agriculture, Washington. Member of the Committee of Revision of the U. S. Pharmacopœia of 1880. From 1881 to 1884 Chemist and Superintendent of the Manufacturing Works of W. H. Schieffelin & Co., New York. In 1884-85 editor of the Druggists' Circular. Died at Tucson, Arizona, August 21, 1885.
- PARSONS, JAMES H.—1892.—President of The J. H. Parsons Chemical Co., 1509 Masonic Temple, Chicago, Ill.

- PASSOLT, HERMAN A.—1888.—In Graduate Chemical Studies, University of Michigan, 1888–89. Chemist, Marquette Cement Co., Deer Park Glenn, Ill.
- PATTISON, GEORGE H.—1892.—Analytical Chemist and Proprietor Economical Supply Co., Lubricating Oils, Water Purifiers and Boiler Compounds, 88 S. Market St., Chicago, Ill.
- PAYNE, CHARLES E.—1880.—Pharmacist, Port Clinton, Ohio.
- PEARSON, WILLIAM A.—1900.—In Ohio. Pharmacist. Undecided upon location. Address Ann Arbor.
- \*PEASE, THESUS D.—1884.—Some years a Pharmacist in the firm of Pease Brothers, Madison, Minn. Died 1888.
- PECK, FRANK J.—1891.—Graduate Student in Metallurgical Chemistry in the University of Michigan until April 1892. In the firm of Crowell & Peck, Chemists, Mining Engineers, and Metallurgists, 732–734 Williamson Building, Cleveland, Ohio.
- \*PENGRA, CHARLES P.—1883.—M.D., University of Michigan, 1881. Professor of Materia Medica and Botany in the Massachusetts College of Pharmacy. Physician. From 1881–84 Assistant in Physiological Chemistry in the University of Michigan. Died Jan. 30, 1892.
- PENNINGTON, JOHN E.—1888.—Formerly Pharmacist. Now Traveling Salesman for Reed & Carnrick, 124 and 126 S. Fifth Ave., New York.
- PERRY, FRED W. R.—1880.—Pharmacist, 709 Woodward Ave., Detroit.—Also representing Nelson, Baker & Co., in Michigan.
- PETT, WILLARD F.—1885.—Formerly Pharmacist in the firm of A. M. Pett & Son. District Manager Mutual Life Ins. Co. of N. Y. Winona, Minn.
- PETTIBONE, CHARLES B.—1899.—Pharmacist with Charles H. Law, Menominee, Mich.
- PETTIS, ERNEST T.—1899.—Pharmacist in the firm of A. Pettis & Son, 427 Saginaw St., Flint, Mich.
- PEYTON, CHARLES S.—1884.—Manufacturing Pharmacist, Snodgrass Drug Co., 547 Main St., Kansas City, Mo.
- PHILLIPS, DANIEL A.—1871.—Pharmacist, Omaha, Neb.
- PHILLIPS, ELMER A.—1899.—Pharmacist with A. E. Phillips, Sinclairville, N. Y.
- PIERCE, BESSIE GILLESPIE—1893.—Teacher of Chemistry in West Bay City, 1895–97. In Graduate Studies in this school 1898–99. Address 505 W. Midland St., West Bay City, Mich.

- PIERRON, JOSEPH J.—1876.—M.D., Coll. of P. & S., Chicago, 1893. Physician and Pharmacist, 355 Fifth Ave., Chicago, Ill.
- †POPPLER, LOUIS M.—Student in 1989-90.—In Pharmacy, Monroe, Mich.
- POST, MARY E.—1877.—Formerly Teacher in Granger Place School, Canandaigua. Address 42 Post St., Rochester, N. Y.
- POWELL, JEHU Z.—1871.—M.D., University of Michigan, 1874. Chemical Laboratory Assistant, 1871-75. Physician and Postmaster, 220 Sixth St., Logansport, Ind.
- \*PRENTICE, FRED F.—1872.—Pharmacist, firm of Prentice & Evanson, Janesville, Wis. Some time member of the State Board of Pharmacy. Died at Long Beach, Cal., May 18, 1894.
- PRYER, CLARA E.—1882.—MRS. EUGENE C. BARTLETT.—Ann Arbor, Mich. Formerly in the practice of Pharmacy with Bennett & Ellis, South Lyon, Mich.
- PUGH, FINDLEY B.—1874.—Pharmacist in the firm of Pugh & Cox, Rushville, Ind., until recently. President Bailey Manufacturing Co., 1315 N. Penn. St., Indianapolis, Ind.
- \*PURTSCHER, CHRISTIAN.—1890.—Pharmacist, Corner Griswold and State Sts., Detroit, Mich. Died Dec. 7, 1897.
- PUSCH, OSCAR C.—1892.—Pharmacist with C. F. Pusch, Maysville, Kan.
- \*QUAYLE, WILLIAM T.—1881.—Had entered the practice of Pharmacy with J. R. Hofflin, Minneapolis. Died December 5, 1882, at Lake, Wisconsin.
- RANKE, WILLIAM F., JR.—1885.—Pharmacist in the firm of Ranke & Nussbaum, 88 Calhoun St., Fort Wayne, Ind.
- RANSOME, ROBERT B.—1882.—Office of the Commissioner of Railroads, Lansing, Mich. Formerly in the practice of Pharmacy. (?)
- RAYNALE, FRANK B.—1888.—Chemist in the Experimental Department of Parke, Davis & Co., Detroit, Mich.
- REED, ELWOOD M.—1877.—Analytical and Manufacturing Chemist. Superintendent and General Manager, Reed Chemical Co., Rochester, N. Y.
- REESE, ERNEST G.—1895.—Lincoln's Pharmacy, Bowling Green, Ohio.
- REEVE, CHARLES J.—1880.—M.D., Jefferson Medical College, 1886. Visiting Physician to the St. Elizabeth Hospital and the Soldiers' Home, Dayton. Physician, Dayton, Ohio.
- REPPERT, FERDINAND.—1872.—Pharmacist, Muscatine, Ia.

- REULE, GUSTAVE A.—1887.—Formerly Pharmacist in charge for A. J. Baumhardt, (Ph.C., 1887), Hutchinson, Kansas. Address care National Hotel, Seattle, Washington.
- \*REX, ROBERT G.—1869.—M.D., University of Michigan, 1871. Assistant in Analytical Chemistry, 1870-71; resident at University Berlin, 1871-73. Some time Professor of Chemistry in Willamette University, Oregon. Physician, Portland, Oregon. Believed to have been murdered at San Francisco in 1878. Age 38.
- REYER, THEODORE A.—1881.—Some time a Pharmacist in the firm of Reyer & Blum. In the firm of Cutting, Reyer & Co. Main and Liberty Sts. Ann Arbor, Mich.
- RICE, D. FRANK—1885.—Some time Pharmacist with Bodine & Schottlin, Fourth and Chestnut Sts., Louisville, Ky. Physician, 4256a, Easton Ave., St. Louis, Mo.
- RICE, J. SCOTT.—1873.—In the firm of Southworth, Rice & Co., Grain and Seeds, Deshler, Ohio. Address Sidney, Ohio.
- RICH, S. AGNES.—1897.—Some time Pharmacist with Loranger & Culver, Saginaw, E. Side. Mich. Address Traverse City, Mich.
- RICHTER, SARA E.—1897.—MRS. ESTHER RICHTER SMITH.—Some time Pharmacist with T. W. Wooton. Teaching Micro-botany and Pharmacognosy in the Pharmacy Department of Illinois Medical College. Address 291 S. Lincoln St., Chicago, Ill.
- \*RIEBE, CHARLES.—1884.—Died August 10, 1885, in Ann Arbor. After his graduation a Pharmacist with A. Frank, 316 Blue Island Ave., Chicago, Ill.
- RIEGER, CHARLES F.—1883.—M.D.. College Physicians and Surgeons. In the firm of C. F. Rieger & Co. Brokers, Kansas City, Mo.
- RISSE, EDWARD J.—1876.—Formerly engaged in Pharmacy. Member of the firm of George White & Co., Importers and Jobbers, 217 Court Ave., Des Moines, Iowa.
- ROBERTSON, FRED L.—1894.—Chemist and Pharmacist with W. P. Draper, 410 Main St., Springfield, Mass.
- ROBINSON, THOMAS E.—1892.—Pharmacist at Lansing, Mich. (?)
- \*ROCKWELL MARK.—1889.—M.D., University of Michigan, 1891. Assistant Physician of Northern Michigan Asylum, Traverse City, Mich., 1891-93. Physician and Surgeon, Benton Harbor, Mich. Died April 22, 1894.
- ROCKWELL, ORLIN M.—1882.—Manager Athens Pharmacy, Athens, Mich.

- RODI, CHARLES H.—1880.—M.D., University of Michigan, 1882. Physician and Surgeon, Tamarack Mining Co., Calumet, Mich. Formerly prescriptionist at the Eastern Michigan Hospital for the Insane.
- ROE, JOHN O.—1870.—M.D., University of Michigan, 1870. Physician, Specialty of Laryngology, 28 Clinton Ave., N., Rochester, N. Y.
- ROGERS, ARTHUR S.—1885.—M.D., University of Michigan, 1890. From 1885 to 1887 Pharmacist in charge at 524 Potter St., East Saginaw. Some time Assistant to the Professor of Ophthalmology, University of Michigan. Physician, Saginaw, E. S., Mich.
- ROGERS, GEORGE.—1899.—Pharmacist with C. A. Sherburne, 65 Academy St., Amsterdam, New York.
- †ROGERS, GEORGE P.—Student in 1887–88.—With Wolcott & Letcher, Pharmacy, Hudson, Michigan.
- ROMANS, EVAN J.—1883.—Pharmacist in the firm of Romans & Rohrbeck, Corner Fourth and Wabash St., St. Paul, Minn.
- ROMIG, SAMUEL V.—1870.—M.D., University of Michigan, 1872. Physician and Surgeon, 727 Morse Ave., Rogers Park, Ill.
- ROOD, GEORGE W.—1881.—Farmer, Lapeer, Mich. Previously a Pharmacist with W. T. Bristol, Lapeer, Mich.
- ROOS, CHARLES L.—1883.—Formerly Pharmacist, New Ulm, Minn. Secretary and Treasurer of New Ulm Roller Mills Co.
- †ROSE, STOUGHTON W.—Student in 1887–88.—Pharmacist, Sherman, Mich.
- \*ROUSE, WILLIAM H.—1869.—M.D., University of Michigan, 1869. Physician. Died May 27, 1889, at Detroit, Mich.
- ROWLAND, CHARLES W.—1889.—Pharmacist, 23 South Main St., Oberlin, Ohio.
- †ROWLAND, RALPH B.—Student in 1892–93.—Pharmacist with C. W. Rowland, Oberlin, Ohio.
- ROYER, THEODORE.—1882.—B.A., University of Michigan, 1883. Assistant in Quantitative Analysis, 1884–85. Chemist of Centralia Nail Works, Centralia, Ill.
- ROYS, HERMAN M.—1876.—B.S., University of Michigan, 1875. General Manager in the firm of A. H. Roys & Co., Druggists, Farwell, Michigan.
- RUDDIMAN, EDSSEL A.—1886.—Phar. M. 1887, University of Michigan. Assistant in Pharmacognosy, 1886–88. M.D., Vanderbilt, 1893. Professor in charge of the Department of Pharmacy in Vanderbilt University, Nashville, Tenn. Author of "Incompatibilities in Prescriptions," 1897.

- RUDOLPH, KARL E.—1893.—Pharmacist in the firm of Rudolph & Clarke, 6 and 8 N. Hazel St., Youngstown, Ohio.
- RUNYAN, ELMER G.—1886.—In 1886–87 Pharmacist for Dr. S. W. Hover, Weston, Mich. Assistant Chemist, Chemical Division U. S. Department of Agriculture, Washington, D. C.
- RUSE, ANDREW E.—1888.—Pharmacist, Humbolt, Iowa.
- RUSSELL, DORIAN M.—1891.—Sometime Prescriptionist with Thum Bros. & Schmidt, Grand Rapids, Mich. Representing Parke, Davis & Co., Detroit, Mich.
- RUSTERHOLTZ, JAMES C.—1899.—Pharmacist with H. H. Burke & Co., 291 Woodward Ave., Detroit, Mich.
- \*RUTAN, JOHN A.—1869.—M.D., University of Michigan, 1870. Died in 1871.
- SADLER, ALPHONSO.—1869.—For some time a pharmacist. Now in real estate business at 437 O'Farrell St., San Francisco, Cal.
- SALLS, JAMES H.—1875.—Pharmacist, Lake Crystal, Minn. (?)
- SANDERS, ISIDORE.—1896.—Some time pharmacist with A. Wiley. With Simon Sanders & Co., Wholesale Liquor Dealers, Trinidad, Col.
- SANFORD, WILLIAM E.—1892.—Some time Professor of Pharmacy, University of Illinois. Chemist, Western Tube Co., Kewanee, Ill.
- SAYRE, LUCIUS E.—B.S. Phar. Honorary, 1896. Ph.G. Phil. Coll.—Dean of the School of Pharmacy in the University of Kansas.
- SCHAUPNER, PHILIP.—1898.—Manager Eberbach & Son, Druggists, Ann Arbor.
- \*†SCHELLINGER, HUGO J.—Student in 1897–98–99.—Mishawaka, Ind. Died in the second semester of his senior year, at Ann Arbor, May 4, 1899.
- SCHERER, OTTO.—1886.—M.D., Detroit Coll. Med., 1890. Studied medicine in the University of Heidelberg, Germany, 1890–91, and in Vienna, Austria, 1896–97. Instructor of Physiology in Detroit College of Medicine. Specialist in Ophthalmology and Otology, 106 Miami Ave., Detroit, Mich.
- SCHERER, WILLIAM.—1893.—Pharmacist, 266 Jefferson Ave., Rochester, N. Y.
- SCHETTLER, GEORGE M.—1889.—Pharmacist, Corner Fort and Shelby Sts., Detroit, Mich.
- SCHUERMAN, WILL M.—1890.—Pharmacist with C. E. Spayd, 502 Monroe St., Toledo, O.
- SCHILLER, EDGAR.—1898.—Pharmacist, Logan, Iowa.

- SCHLOTTERBECK, JULIUS O.—1887.—B.S., (Chem.) 1891. Ph.D., Bern, 1896. Some time a dispensing pharmacist. Assistant Professor in charge of Pharmacognosy in the University of Michigan.
- SCHMID, OSCAR F.—1890.—Ph.B., 1889. Some time assistant chemist of Iron and Steel Works at Joliet, Ill. In the firm of the Weeks Drug and Chemical Co., manufacturing pharmacists, Jackson, Mich.
- SCHMID, THEOPHILUS.—1881.—Pharmacist, 11,100 Michigan Ave., Chicago, Ill.
- SCHMIDT, HENRY P.—1898.—Pharmacist, Anacortes, Washington.
- SCHMIDT, LOUIS W.—1883.—Pharmacist, Fort Wayne Drug Co., Fort Wayne, Ind.
- SCHMIDT, SAMUEL.—1881.—Pharmacist at 2285 First Ave., New York, (?)
- SCHMIDT, WALTER K.—1891.—Analytical Chemist and successor to Thum Brothers & Schmidt, Pharmacy, 84 Canal St., Grand Rapids, Mich.
- SCHMITT, EDWARD L.—1896.—In pharmacy with Joseph M. Schmitt, 312 North St., Rochester, N. Y.
- SCHOTT, ADOLPH A.—1884.—Pharmacist in the firm of A. A. Schott & Co., 503 Genesee Ave., Saginaw, E. S., Mich.
- SCHRAGE, WILLIAM.—1874.—Pharmacist until 1886. Superintendent Phoenix Chair Co., Sheboygan, Wis.
- SCHUMACHER, ALBERT C.—1884.—Pharmacist, Ann Arbor, Mich. Member of the Michigan State Board of Pharmacy.
- †SCHWEITZER, DAVID S.—Student in 1892-93.—Pharmacist, Leipsic, Ohio.
- SEABURY, FRANK P.—1899.—Pharmacist with H. L. Bird, Ph.C., 1891. Benton Harbor, Mich.
- SEIBERT, PAUL G.—1899.—Pharmacist with Lewis & Crofoot, Pontiac, Mich.
- SELTZER, LEONARD A.—1892.—Pharmacist with F. W. R. Perry, (Ph.C., 1880,) until 1900. Now exclusively prescription pharmacist at 32 Adams Ave., Detroit, Mich.
- SENIER, ALFRED.—1874.—M.D., University of Michigan, 1874; Ph.D., Berlin, 1887; F.C.S., London, 1875; F.I.C., London, 1878. Demonstrator of chemistry in the laboratories of the Pharmaceutical Society of Great Britain, 1876-81. Lecturer on chemistry in St. John's College, London, 1881-84. Professor of Chemistry in Queen's College, Galway, Ireland.

- SERVICE, CAROLINE B.—1898.—Some time in the manufacturing laboratory of Parke, Davis & Co., Detroit, Mich. Address, 647 Mt. Elliott Ave., Detroit, Mich.
- SEXTON, WILLIAM A.—1881.—Pharmacist, Marsfield, Wis.
- SEYFFARDT, LOUIS E.—1883.—Some time a pharmacist at 1501 Clinton St., St. Louis, Mo. (?)
- \*SEYMOUR, JAMES.—1894.—Assistant in Qualitative Analysis and afterward in Pharmacy, University of Michigan, 1895-97. Teacher of chemistry and physics, Negaunee, Mich. Address, 727 Detroit St., Flint, Mich.
- SHAFFER, CLARENCE M.—1883.—Transcribing clerk in office of the Adj. General, Columbus, Ohio. Formerly Pharmacist at Canal Fulton.
- SHANAFELT, FREDERICK P.—1883.—Pharmacist, Canton, Ohio. In 1883-84 assistant in pharmacy in the University of Michigan.
- SHAPER, JOHN H.—1888.—M.D., University of Michigan, 1891. At the University of Berlin, 1896-99. Instructor in Pharmacy in Purdue University, Lafayette, Ind., in 1888-89. Physician and surgeon, 208 Washington St., Herkimer, New York.
- SHEEDY, JOHN T.—1892.—Some time Assistant Chemist at the New York State Agricultural Experiment Station, Geneva, New York. Pharmacist, Worcester, Mass. Real Estate Agent, 15 Belmont St., Worcester, Mass.
- \*SHEFFIELD, WILLIAM C.—1876.—Pharmacist, with J. N. Letoneneau, M.D., Laconia, N. H. Died at Concord, N. H., June 18, 1896.
- \*SHEPARD, OSCAR ELIJAH.—1874.—Pharmacist for some years in firm of Shepard & Byers, Kokomo, Ind. Died July 17, 1884, at Mendon, Mich.
- SHEPHERD, FRANK I.—1891.—A.B., Sanford University, Cal., 1895. Some time Assistant Chemist with the William S. Merrill Chemical Co., manufacturers, Cincinnati, Ohio. Professor of Chemistry, Univ. Denver, University Park, Colo., 1897-98. Instructor in Chemistry, University of Cincinnati, from 1898-1900. Address, 327 Fairview Ave., Cincinnati, Ohio.
- SHERARD, CHARLES C.—1890.—Analytical chemist for Frederick Stearns & Co., manufacturing pharmacists, Detroit, Mich. Professor of Theoretical and Practical Pharmacy, Department of Pharmacy, Detroit College of Medicine.
- SHORT, LEONARD.—1898.—With the A. H. Lyman Drug Co., 304 Oak St., Manistee, Mich.



- SHUBEL, CHARLES G.—1887.—Formerly pharmacist with Milburn & Williamson, Woodward Ave., Detroit. With Fred Shubel, Boots and Shoes, Lansing, Mich.
- SHULER, DARIUS P.—1887.—B.S., (Chem.) 1891.—Teacher of Chemistry in the City High School at Ypsilanti, Mich., in 1888–89. Chemist Canadian Copper Co., Sudbury, Ontario, Canada.
- SMITH, ALBERT W.—1885.—B. S. Case School Applied Science, 1887. Ph.D., Zuerick, 1891. Professor of Chemistry and Metallurgy in the Case School of Science. Address, 1101 E. Madison Ave., Cleveland, O.
- SMITH, AMASA D.—1878.—Pharmacist, 142 Merrimack St., Manchester, N. H.
- SMITH, BURNETTE B.—1900.—With Stein, Roth Drug Co., Norwalk, O.
- SMITH, CARL EDWARD.—1893.—Formerly (1893–98) analytical chemist with Edward R. Squibb & Sons, Brooklyn, N. Y. Professor of Pharmacy in the Medico-Chirurgical College of Philadelphia in 1898–99. Manufacturing chemist with Rosengarten & Sons, Seventeenth and Fitzwater Sts., Philadelphia, Pa.
- SMITH, CHANNING.—1884.—Resident graduate in the University, 1884–85. Address, 1239 Washtenaw Ave., Ann Arbor, Mich.
- †SMITH, CLARK E.—Student in 1892–93.—Pharmacist, Vermontville, Mich.
- SMITH, EDGAR D.—1886.—M.D., Rush Medical Chicago, 1891. For some time a chemist for the Chicago Rolling Mill Co., South Chicago, Ill. In 1885–86 assistant in the chemical laboratory of the University of Michigan. Physician and surgeon, 306 E. Division St., Chicago.
- SMITH, HARRY T.—1896.—Some time chemist with the Lancaster Caramel Co., Lancaster, Pa. Acting Hospital Steward, Washington Barracks, D. C.
- SMITH, HENRY F.—1891.—Pharmacist. Proprietor of the Gem Pharmacy, Oberlin, Ohio.
- SMITH, J. HUNGERFORD.—1877.—Pres. J. Hungerford Smith Co., manufacturing chemists, 224 W. Main St., Rochester, N. Y.
- SMITH, MARIE R.—1888.—M.D., Hahnemann Med. Coll., 1894. For some time in Hollands Pharmacy, Corner 55th and Madison Ave., Chicago. Physician and Surgeon, N. E. Cor. Garfield Boulevard and Madison Ave., Hyde Park, Chicago, Ill. Professor of Anatomy and Histology, International Medical Mission College.

SMITH, OSCAR J.—1889.—Some time manufacturing chemist with the Stewart & Holmes Drug Co. Pharmacist in the firm of Smith and Kennedy, Cor. Second Ave., and James St., Seattle, Wash.

SMITH, STEWART W.—1876.—B.A., 1873; M.D., 1877; both in this University. Physician, Denison, Texas.

SNOW, HENRY P.—1891.—For some time prescriptionist with William H. Quinn, Ballston Spa., New York. Traveling salesman for Johnson & Johnson, Manufacturing Chemists, New Brunswick, N. J. Address, LeRoy, N. Y.

SNOW, HERBERT W.—1884.—Formerly analytical chemist for the manufacturing laboratory of Frederick Stearns & Co., Detroit. General Manager United States Pharmacal Co., 10-14 Franklin St., Chicago, Ill.

SOETJE, EDWARD C.—1888.—Pharmacist 434 South Broadway, Denver, Col. Secretary of the Bureau of Health of Denver.

SOETJE, OSCAR H.—1892.—Pharmacist, Monticello, Iowa.

SOYER, GEORGE P.—1883.—M.D., Bellevue Hosp. Med. Coll. Physician and Surgeon, Willoughby, Ohio.

SPENCER, ELLERY.—1878.—Pharmacist, Marshall, Tippecanoe Co., Ind.

SPENCER, HENRY H.—1885.—A.B., University of Michigan, 1882. Pharmacist, Monroe, Mich. (?)

SPENCER, JOHN J.—1883.—Some time pharmacist in charge of the Simoneau drug store, East Saginaw. Assistant Postmaster, Saginaw, Mich.

SPENKER, LOUIS J.—1889.—Formerly manufacturing pharmacist with the Wolle Chemical Co., Toledo, Ohio. Manager Northwestern Ohio, John Hancock Mutual Life Ins. Co., of Boston, Mass. Office 209 Nasby Building, Toledo, Ohio.

STABLER, LAIRD J.—1885.—B.S., Purdue Univ., 1890. Chemist to the Cornell Pheninger Chemical Co., manufacturers, Columbus, Ohio. Graduate student in chemistry, John Hopkins Univ., Baltimore, 1890-91. Professor of Chemistry, University of Southern California, Los Angeles, Cal.

STAEBLE, WILLIAM C.—1875.—For some years in the practice of pharmacy. Now attorney at law, Tombstone, Ariz. For four years Judge of Probate for Custer Co., Mont.

STANDART, CLAYTON J.—1887.—For some time in charge of H. P. Hayes' Pharmacy, 312 Elk St., Buffalo, N. Y. Vinegar expert in New York State Department of Agriculture. Address, 284 Breckenridge St., Buffalo, N. Y.

- STANTON, EUGENE M.—1869.—Engaged in pharmacy until 1879. Palmer, Wash.
- STECHEER, HENRY W.—1878.—Pharmacist in the firm of Stecher Bros., 1066 Pearl St., Cleveland, Ohio. In 1877–78 assistant in analytical chemistry in the University of Michigan. Professor of Pharmacy in the Cleveland School. Secretary and treasurer of the Pearl Street Bank.
- STEENMAN, LEONARD F.—1899.—Pharmacist and manager for H. Riechel, 182 Stocking St., Grand Rapids, Mich.
- STEINCAMP, CHARLES H.—1895.—Has a pharmacy at 721 Utica St., Toledo, Ohio.
- STEINER, SAMUEL G.—1885.—Some time pharmacist at 910 Main St., Richmond, Ind. Representing Parke, Davis & Co., Detroit, Mich.
- †STEKETEE, JOHN G.—Student in 1888–89.—Pharmacist, Grand Rapids, Mich.
- STEPHENSON, AUGUSTUS C.—1873.—Formerly pharmacist, 317 E. 5th St., Des Moines, Ia. Retired. Address, 1222 Capital Ave., Des Moines, Ia.
- STEVENS, ALICE M.—1897.—Employed as pharmacist at Beloit, Wis.
- STEVENS, ALVISO B.—1875.—From 1877 to 1886 a pharmacist and analytical chemist, at 33 Lafayette Ave., Detroit. Assistant Professor in charge of Pharmacy in the University of Michigan. Secretary of the Faculty of the School of Pharmacy. Member of Committee of Revision of the U. S. Pharmacopœia, 1900 to 1910.
- \*STEVENS, JERRY CHARLES.—1883.—Some years a pharmacist with Melville Brothers, Lima, Ohio. Died Feb. 28, 1889.
- STEVENS, MERARI B.—1870.—M.D., University of Michigan, 1869, and Bellevue, 1876. Physician, Defiance, Ohio.
- STEVENS, RANSOM H.—1877.—M.D., this University, 1878. Physician, 129 Monroe St., Grand Rapids, Mich. In charge of Michigau Soldiers' Home Dispensary; surgeon to the Michigan Soldiers' Home and to Burton Avenue Lying-in Hospital.
- STEVENSON, GEORGE C.—1894.—Graduate student in Chemistry, University of Michigan. (?)
- STEVENSON, WILLIAM E.—1884.—Pharmacist, 901 Center Ave., Bay City, Mich.
- ST. JOHN, WILLIAM I.—1884.—M.D., this University, 1892. Physician, Highland Station, Oakland Co., Mich.
- STEWART, THOMAS M.—1876.—Pharmacist, 700 Cookman Ave., Asbury Park, N. J.

- STILWELL, GEORGE G.—1900.—Pharmacist with Wilder (Ph.C., 1896), State St., Ann Arbor, Mich.
- STINSON, EDWIN J.—1882.—Some time pharmacist, Little Falls, Herkimer Co., N. Y. Manufacturer of Knit Goods and Secretary for Litus Sheard Co., Little Falls.
- STIVERS, EDWIN R.—1886.—Pharmacist in the firm of Lighthall & Stivers, Demersville, Montana.
- STODDARD, HARRY S.—1897.—In pharmacy with C. B. Stoddard, 15 Trout St. E., Monroe, Mich.
- STONE, CLARENCE G.—1877.—Until 1882 a prescription pharmacist in Detroit. Commercial Representative of the "Mellin's Food Co. of North America," Boston, Mass. Address, 2 East 42nd St., New York.
- STURGIS, AMOS D.—1897.—Pharmacist, 758 South Division St., Grand Rapids, Mich.
- STILES, MILTON D.—1871.—B.S., Mansfield Normal School, 1869; M.D., University of Michigan, 1872. Engaged in pharmacy until 1875. Traveling salesman, Athens, Pa.
- SUTTON, JOHN B.—1892.—Pharmacist in the firm of J. B. Sutton & Co., Sixty-first St. and Monroe Ave., Chicago, Ill.
- †SWEETZER, FRANK E.—Student in 1874-76.—Pharmacist, Port Huron, Mich.
- TABER, HERBERT E.—1898.—Pharmacist in the firm of Taber, Price & Bannon, Narragansett Pier, R. I.
- TABER, ROLAND B.—1896.—M.D., University of Illinois, 1900. Some time in pharmacy with Harry L. Bird, Benton Harbor, Mich.
- TAYLOR, HENRY W.—1896.—B.S., Earlham College. Pharmacist with J. G. Greener & Co., 401 N. College St., Nashville, Tenn.
- TAYLOR, WALLACE.—1870.—A.B., Oberlin, 1867; M.D., University of Michigan, 1870; M.A., Oberlin, 1873. Physician in the missionary service, Osaka, Japan.
- TEETER, CHARLES W.—1880.—Some time pharmacist in Peoria, Ill. Secretary and manager of Peoria Casket Co.
- TEETERS, WILBER J.—1895.—B.S., 1893, and M.S., 1898, Mount Union College. Demonstrator of Chemistry, Medical Department, State University of Iowa, Iowa City.
- TEGARDEN, JOHN L.—1894.—Until 1897 chemist with F. Stearns & Co., Detroit, Mich. Since 1897 special representative in the Southern States for F. Stearns & Co. For some time Instructor in Pharmacy in the Department of Pharmacy, Detroit College of Medicine.

- TEXTOR, OSCAR.—1881.—In 1881-83, Assistant in Quantitative Analysis, University of Michigan. From 1883 to 1894, the chemist of the Cleveland Rolling Mill Co. Analytical Chemist and Metallurgist, 158 Superior St., Cleveland, Ohio.
- THAYER, HENRY A.—1890.—Pharmacist with J. L. Thayer, Sherman, N. Y.
- THOMPSON, CARY W.—1881.—Some time chemist for the London Mining Co., Leadville, Colorado. Pharmacist, San Diego, Cal. (?)
- THOMPSON, FRANK A.—1881.—Graduate student in the University in 1882-83. For several years a prescriptionist. For some years chemist in charge of the analytical laboratory of the works of Parke, Davis & Co. Manager for F. A. Thompson & Co., Manufacturing Chemists, Detroit, Mich.
- THOMPSON, JOHN.—1889.—Formerly with Myron Calkins, Clinton, Mich. Pharmacist in the firm of S. Van Etta & Son, Hudson, Mich.?
- THOMPSON, MASON S.—1886.—Some time pharmacist with T. E. Sweetzer, Port Huron, Mich. (?)
- THORNBURGH, THOMAS R.—1882.—Pharmacist, 950 Fort Wayne Ave., Indianapolis, Ind.
- THUM, FERDINAND.—1880.—For years pharmacist in the firm of H. & F. Thum (classes of '78 and '80), Grand Rapids, Mich. Address, 105 Columbia St., Pasadena, Cal.
- THUM, HUGO.—1878.—Formerly pharmacist in the firm of H. & F. Thum. Manager of the O. & W. Thum Co., Grand Rapids, Mich.
- †THURSTON, AZOR.—Student in 1883-84.—Pharmacist and Analytical Chemist, Grand Rapids, Ohio.
- TIBBALLS, WILLIAM J.—1890.—Some time assistant chemist at New York Agricultural Experimental Station, Geneva, N. Y. Graduate student in chemistry at University of Michigan, 1891-92. City chemist and bacteriologist for Board of Health, Detroit, Mich. Address, 99 Cass St., Detroit, Mich.
- †TIDRICK, ROLLIN S.—Student in 1890-91, 1892-93. Dealer in drugs and general merchandise, Bringham, Ind.
- TODD, ADRIAN H.—1880.—Manufacturers' Agent and Broker in Druggists' Specialties, 381 The Arcade, Cleveland, Ohio.
- TODD, ARTHUR L.—1900.—In pharmacy with Chapel (Ph.C., '93,) and Morris (Ph.C., '99,), Charlevoix, Mich.
- TOMPKINS, J. WARREN.—1877.—For some years a pharmacist in New York. In dry goods business, 35 North St., Middletown, N. Y.

- TOPPING, CHARLES O.—1894.—Chemist with Edward R. Squibb & Sons, 36 Doughty St., Brooklyn.
- TOPPING, GEORGE B.—1887.—Manufacturing pharmacist in charge of the laboratory of Orr, Brown & Price until 1896. Pharmacist, 61 Parsons St., Columbus, Ohio.
- TOWNSEND, PERRY L.—1878.—Teacher, and later farmer, Dixboro, Mich.
- TRAVIS, FREDERICK A.—1884.—Pharmacist in the firm of Travis & Baker, St. Johns, Mich.
- TREMAINE, HENRY A.—1875.—Formerly a pharmacist in the firm of Tremaine & Co., Ann Arbor. Secretary and Treasurer of the Crouse-Tremaine Carbon Co., Fostoria, Ohio.
- TROWBRIDGE, MILES L.—1896.—Graduate student in 1896-97. Chemist with Merck & Co., 13-19 University Place, New York City.
- TROWBRIDGE, MILTON L.—1896.—Resident Graduate in 1896-97. Chemist with Buschemeyer Brothers, Louisville, Ky. Later Chemist with sewerage disposal plant. Address 216 Ulster St., Syracuse, N. Y.
- †TUCKER, OSCAR.—Student in 1872-73.—Crolius, Tucker & Allyn Co., 14 Fifth St., Minneapolis, Minn.
- TUPPER, EDWARD A.—1885.—Pharmacist in the firm of Tupper & Chamberlin, 800 Tenth St., South, Minneapolis, Minn.
- TURNER, DELL D.—1881.—pharmacist in the firm of D. D. Turner & Co., Northfield, Minn.
- TURNER, T. GRANT.—1883.—Previously a pharmacist in Quincy, Mich. Cashier of Atlantic National Bank, Atlantic, Iowa.
- \*UPJOHN, AMELIA.—1871.—MRS. CAMPBELL.—Died February 1876.
- UPJOHN, MARY.—1871.—MRS. SIDMAN.—415 Pearl St., Kalamazoo, Mich.
- †UPJOHN, WILLIAM E.—Student in 1872-73.—M.D., University of Michigan, 1875. President Upjohn Pill and Granule Co., Kalamazoo, Mich.
- †UPSON, EUGENE S.—Student in 1885-87.—Pharmacist, Durand, Mich.
- VANDIVERT, ARTHUR H.—1879.—Lately a Pharmacist in the firm of Vandivert Brothers, Los Animes, Colorado. In 1878-79 Assistant in Analytical Chemistry in University of Michigan. Farmer. Bethany, Missouri.
- VAN DEN BELT, NICHOLAS.—1882.—Pharmacist, 612 Dix Ave., Detroit, Mich.

- VAN ETTA, HARRY S.—1889.—For some time Pharmacist in the firm of Van Etta & Crandall, Burr Oak, Mich. Traveling Salesman Toledo Rubber Co., 418 Summit St., Toledo, Ohio.
- VAN SCHOONHOVEN, GARRIE G.—1891.—Pharmacist with Godbe Pitts Drug Co., Salt Lake City, Utah.
- VAN ZWALUWENBURG, ABRAM.—Ph.C., 1887; B.S. (Phar.), 1898.—Holder of the Stearns Fellowship of Research in 1897-98. In graduate studies for the Master's Degree in 1898-99. For several years prior to 1897 a Metallurgical Chemist and Superintendent of Works in San Louis Potosi, Mexico. Instructor in Chemistry and Metallurgy in the United Correspondence School, 156 Fifth Ave., New York City.
- VARNUM, EDWARD C.—1883.—Pharmacist in the firm of R. S. Varnum's Sons, Jonesville, Mich.
- VEDDER, FRED F.—1886.—Pharmacist in charge for Mrs. I. N. Vedder, Rushville, Ill.
- VOGEL, ALBERT F.—1889.—Pharmacist with Jas. R. Hofflin & Co., Minneapolis, Minn., until 1892. Address Chelsea, Mich.
- \*VON WALTHAUSEN, CHARLES A. F.—1896.—Some time in Pharmacy in Bay City, Mich. A private in the Thirty-first Michigan Infantry in the war with Spain. Died at Camp Thomas, Chickamauga, Aug. 10, 1898.
- WAGGONER, ALBERT T.—1884.—Pharmacist, 731 Kansas Ave., Topeka, Kansas. Also Treasurer of Groves Manufacturing Co.
- WAGNER, CHARLES L.—1897.—Some time with William S. Merrill Chemical Co., Cincinnati, Ohio. Engaged with Bay City Sugar Co., Bay City, Mich., September 1 to February; remainder of the year with River Furnace, Corrigan, McKinney & Co., Cleveland, O.
- WAGNER, GEORGE—1893.—Instructor in Botany and Pharmacognosy. School of Pharmacy, Northwestern University, until December 1893. Then Assistant Professor of Pharmacy in Kansas School of Pharmacy until 1899. Student and Assistant in Zoology, University of Michigan.
- WAIT, CORA L.—1890.—MRS. FRED B. CULVER.—421 N. Warren Ave., Saginaw, E. S., Mich. Formerly Dispensing Pharmacist in Northern Michigan Insane Asylum.
- WALKER, FRED L.—1879.—Pharmacist at 424 Woodward Ave., Detroit, Mich.
- WALLACE, ROBERT H.—1878. Manufacturing Pharmacist in firm of Canning, Wallace & Co., 46 Front St., Portland, Oregon.

- †WALLACH, JOHN F.—Student in 1877-79, Law Department 1879-80.—  
3216 Lake Park Ave., Chicago, Ill.
- WARD, RALPH M.—1881.—For Some time Pharmacist, Yankton, S.  
Dak. In 1881-83 Manufacturing Pharmacist with the house of  
W. H. Schieffelin & Co.—Bookkeeper, San Diego, Cal.
- WARE, EZRA J.—1888.—B.S. (Phar.) University of Michigan, 1897.—  
Some time Pharmacist, Ware's Pharmacy, Grand Rapids, Mich. In  
the Experimental Department of Parke, Davis & Co.
- WARNER, GEORGE J.—1892.—Birmingham, Mich.
- WARREN, WILLARD MCK.—1887.—Pharmacist, Denver, Colorado.  
Traveling for The Mercer Chemical Co., Omaha, Neb. Address  
23 Physician's Building, Fourteenth and Stout Sts., Denver, Col.
- WASHBURN, EDWARD E.—1895.—With Washburn & Skinner, Phar-  
macists, New London, Ohio.
- WASHBURN, JOHN L.—1895.—Some time with E. E. Calkins, Ann  
Arbor, Mich. Student in Medical Department, University of  
Buffalo. Address, Perry, N. Y.
- WATERMAN, CHAUNCEY N.—1888.—Formerly chemist for the River-  
side Chemical Works, 489 Kent Ave., Brooklyn, N. Y. Now  
analytical chemist, Room 65, 620 Atlantic Ave., Boston, Mass. (?)
- WATERS, HORACE H.—1895.—Some time in pharmacy, Summit St.,  
Toledo, O. In the study of Medicine, University of Michigan.  
Address, Monroe, Mich.
- WATKINS, CHARLES F.—1898.—In the study of medicine in this Uni-  
versity, Department of Medicine and Surgery. Address, Ann  
Arbor, Mich.
- \*WATSON, CATHERINE M.—1876.—Resident graduate, University of  
Michigan, 1876-77. Died July 20, 1877, in Ann Arbor.
- WATSON, JOHN B.—1880.—Pharmacist and Manager, Boyne City, Mich.
- WEAVER, CLARENCE A.—1896.—Pharmacist with F. W. R. Perry, (Ph.C.  
'80,) 709 Woodward Ave., Detroit, Mich.
- WEAVER, JONATHAN.—1874.—General Manager and Pharmacist in the  
firm of Jonathan & A. Weaver, wholesale and retail druggists,  
Greenville, Ohio.
- WEEKS, EUGENE J.—1870.—Ph.G., New York, 1866. In the firm of  
the Weeks Drug and Chemical Co., Jackson, Mich.
- WEHRLI, ALBERT C.—1779.—Ph.G., Chicago, 1878. Pharmacist, 215  
West North Ave, Chicago, Ill.
- WEIGHTMAN, MATTHEW, JR.—1889.—Pharmacist, 833 Kansas Ave.,  
Topeka, Kansas.



- WELLS, JOSEPH J.—1892.—Pharmacist in the firm of J. E. Wells & Son, Athens, Mich.
- WELLS, WILLIAM H.—1875.—B.A., University of Michigan, 1874; L.L.B., University of Michigan, 1877. Attorney at Law, Detroit, Mich.
- WERTZ, SILAS GRANT.—1893.—M.D., Jeff. Med. Coll., Pa., '95.—Physician, Station D, Pittsburg, Pa.
- WESENER, JOHN A.—1888.—M.D.—Professor of Chemistry, Medical Department, University of Illinois; Director of the Columbus Laboratories and of the Science Department of the American Cereal Co. Address, 103 State St., Chicago, Ill.
- \*WESTFALL, DEAN M.—1890.—Some time in pharmacy with C. D. Woodworth, Ellensburg, Wash. Died Nov. 10, 1892.
- WETZEL, ROBERT M.—1884.—Pharmacist for Calumet and Hecla Mining Co., Calumet, Mich.
- WHEELER, ALBERT M.—1881.—M.D., this University, 1883. Physician and Surgeon in the firm of Wheeler & Jackson, Houghton, Mich.
- WHEELER, OSCAR C.—1899.—Pharmacist, 3 Hamline Ave., Zanesville, Ohio.
- WHELOCK, WILLIAM C.—1889.—Pharmacist, corner Kalamazoo Ave. and Rose St., Kalamazoo, Mich.
- WHINERY, JOSEPH B.—1888.—M.D., 1892. Some time Chemist with Meyer Bros., wholesale pharmacists, St. Louis, Mo. Physician, Grand Rapids, Mich.
- WHITE, BESS WOODS.—1883.—MRS. WILL HAGER, 1885.—Ashland, Boyd Co., Ky. Entitled to registration as a pharmacist in Kentucky by decision of the court of appeals of that state, Dec. 15, 1886, confirming the decision of the Jefferson Court of Common Pleas, rendered in Louisville, Ky., March 21, 1884.
- WHITE, WILLIAM H.—1882.—M.D., University of Michigan, 1883. Physician, 73 Monroe St., Grand Rapids, Mich.
- WHITING, FRANK H.—1900.—Contemplating chemical manufacture. Address Union City, Mich.
- \*WHITLARK, WALTER J.—1876.—Died, July 28, 1888, in Ann Arbor, Mich.
- WHITMAN, ALVAH C.—1875.—Pharmacist in the firm of A. C. Whitman & Co., Hurley, Wis.
- WHITNEY, JAMES W.—1891.—Pharmacist with I. P. Fitchett, 400 Broadway, Saratoga Springs, New York.

- WICKWIRE, FRANK.—1882.—Pharmacist with J. Hoehn (Ph.C., 1882), 1228 Euclid Ave., Cleveland, Ohio. (?)
- WILBUR, THEODORE S.—1873.—Pharmacist, 2616 Olive St., St. Louis, Mo. (?)
- WILDER, GEORGE P.—1896.—Assistant in qualitative chemistry, 1895-96. Has a pharmacy on State St., Ann Arbor, Mich.
- \*WILEY, CHARLES D.—1887.—Died, May 2, 1888, at Lansing, Mich. Had been engaged in pharmacy in Lansing.
- WILHITE, EDWIN L.—1884.—Some time in charge manufacturing department of Metz, drug house, corner Eleventh and F. Sts., Washington, D. C. Hospl. Steward on Cruiser Newark, in Chinese Waters. Home address, 330 E St. N. E., Washington, D. C.
- WILLIAMS, CHARLES H.—1894.—Ph.B., Adrian College. M.D., University of Michigan, 1898, and Jefferson Medical College, Philadelphia, in 1899. Acting Instructor in Pharmacognosy, University of Michigan, 1895-96. At present studying in New York. Address, 32 Comstock St., Adrian, Mich.
- WILLIAMS, ELISHA B.—1896.—Some time in manufacturing pharmacy with Parke, Davis & Co. Pharmacist with Hurd & Gray Co., 208 Woodward Ave., Detroit, Mich.
- WILLIAMS, SEWARD W.—1881.—Chemist for the manufacturing works of Seabury & Johnson, 21 Platt St., New York, works at East Orange, N. J. In 1884-86 editor of the Weekly Drug News. In 1881-82 assistant in analytical chemistry, University of Michigan. Address, 8 Brighton Ave., East Orange, N. J.
- WILLMARTH, GEORGE E.—1875.—Pharmacist in the firm of Willmarth & Hazelton, Market St., Pottsdam, N. Y. In 1876-79 chemist with the house of Wm. S. Merrell & Co., Cincinnati, O.
- WILSON, FRANK H.—1896.—Some time pharmacist with C. B. Gatton, Virginia, Ill. Assayer Rosedale Mining Co., Rosedale, New Mexico.
- WILSON, FREDERICK L.—1879.—Pharmacist, residing at Riverbank, Stanislaus Co., Cal., for restoration of health.
- WILSON, GEORGE E.—1878.—Some time pharmacist in the firm of Hill & Wilson. Real Estate and Loans, Van Wert, Ohio.
- WILSON, OSCAR L.—1881.—Ph.B., Ill. Wesleyan Univ., 1888. Pharmacist. Some time in the firm of O. L. Wilson & Co., Mattoon, Ill. Address, Danville, Ill.
- WILSON, WILLIAM, JR.—1898.—Proprietor in pharmacy at 43 E. Main St., Amsterdam, N. Y.

- \*WILSON, WILLIAM M.—1871.—For some years engaged in pharmacy in St. Louis, Mo. Died, February 9, 1877.
- WISE, CLARENCE H.—1890.—Pharmacist in the firm of C. A. Wise & Sons, wholesale and retail druggists, Cedar Falls, Ia.
- WISE, PARKE E.—1894.—Pharmacist in the firm of C. A. Wise & Sons, wholesale and retail druggists, Cedar Falls, Ia.
- WISEMAN, FRANK D.—1888.—Representing Parke, Davis & Co. Detroit, Mich.
- †WISWELL, JESSE N.—Student in 1889-90; Literary Department in 1888-89.—Pharmacist, Decatur, Mich.
- WOLCOTT, WILLIAM A.—1870.—Pharmacist, Batavia, Ill.
- WOLF, FRANK C.—1880.—Pharmacist, in the firm of Wolf & Chilson, Broadway & Second St., Los Angeles, Cal.
- WOOD, CHARLES.—1875.—Pharmacist, Los Angeles, Cal. (?)
- WOOD, HOMER R.—1890.—Formerly Pharmacist with Dr. J. N. McCandless. Assayer and book-keeper with Lawler & Wells, Miners, Prescott, Arizona.
- WOOD, JOSEPH B.—1889.—For some years a pharmacist. Some time in chemical studies in the Department of Literature, Science, and the Arts, University of Michigan. (?)
- WOOD, LOUIS N.—1879.—Pharmacist and wholesale druggist, 307 W. Superior St., Duluth, Minn. (?)
- WORDEN, CLINTON E.—1878.—Manufacturing pharmacist, president and manager in the firm of Clinton E. Worden & Co., 214 to 220 Townsend St., San Francisco, Cal.
- WORDEN, EDWARD C.—1890.—Assistant chemist, for nitrogen determination, New York State Agricultural Experimental Station, Geneva, N. Y., until 1898. In the firm of Crane & Worden, Analytical and Consulting Chemists, 27 Union Square (Broadway), New York.
- WRAMPELMEIER, THEODORE J.—1878.—A.B., University of Michigan, 1878. Universities of Strassburg and Zuerick, in 1883-84. In 1885-86 Assistant Professor of Organic Chemistry and Pharmacy in the University of Michigan. Consulting chemist for U. S. Internal Revenue at San Francisco; also to the California Powder Co. and to the Occidental Chemical Co. Address, 320 California St., San Francisco, Cal.
- †WRIGHT, CHARLES.—Student in 1871-72.—Manufacturer, 19 Jefferson Ave., Detroit, Mich.
- †WRIGHT, WINTHROP H.—Student in 1892-93; Literary Department, 1893-94.—Chemist and Assayer, North Adams, Mich.

- WURMB, THEODORE H.—1881.—Pharmacist, 1923 East Grand Ave., St. Louis, Mo.
- WYCKOFF, WILL C.—1884.—Pharmacist from 1884 to 1897. Sold on account of poor health. Manager of Rock Rapids Telephone Co., Rock Rapids, Iowa.
- WYMAN, HUGH S.—1877.—M.D., Michigan College of Medicine, 1882. Physician and Surgeon, Olympia, Wash.
- YOTT, FRANK, JR.—1900.—In pharmacy Wayne, Mich.
- YOUNG, ABRAM VAN E.—1875.—Ph.B., University of Michigan, 1875. Fellow in Johns Hopkins Univ. in 1875-77, and afterward in Harvard Univ. Professor of Chemistry in the Northwestern University, Evanston, Ill.
- YOUNG, ARTHUR L.—1877.—In 1890-91, the chemist of a sugar refinery in the Philippine Islands. Vice-President of the firm of Wakelee & Co., importers, wholesale and retail, in drugs, chemicals, etc., cor. Brush and Montgomery St., San Francisco, Cal.
- YOUNG, ROY D.—1890.—Phar.M., 1892; B.S., Harvard, 1894; M.D., Coll. Physicians, N. Y., 1898. Some time assistant chemist at the Geneva, N. Y., Experiment Station. Physician, 42 Pleasant St., Arlington, Mass.
- ZEIG, AUGUST C.—1889.—Manufacturing chemist in the pharmaceutical laboratory of Clinton E. Worden & Co., 214-220 Townsend St., San Francisco, Cal.
- ZERSE, OTTO G.—1882.—Pharmacist, Lafayette, Ind. Lecturer on Materia Medica in the School of Pharmacy in Purdue University.
- †ZIMMER, WILLIAM A.—Student in 1884-86.—Pharmacist, Manistee, Mich.
- ZIMMERMAN, SAM H.—1898.—Pharmacist with Frank Chrisman & Co., Lodi, Cal.
- ZWICK, KARL G.—1888.—Some time in chemical studies in Wiesbaden, Germany. Pharmacist, Eleventh St. and Madison Ave., Covington, Ky.





UNIVERSITY BULLETIN  
New Series, Vol. 2, No. 4 .  
May 15th, 1901

. Issued Every Six Weeks during  
the University Year

# UNIVERSITY OF MICHIGAN.

## SCHOOL OF PHARMACY



## ANNOUNCEMENT FOR 1901-1902

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ANN ARBOR, MICH.:  
PUBLISHED BY THE UNIVERSITY  
1901





UNIVERSITY OF MICHIGAN

SCHOOL OF PHARMACY.



ANNOUNCEMENT FOR 1901-1902

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ANN ARBOR, MICH.:  
PUBLISHED BY THE UNIVERSITY  
1901

## CALENDAR OF THE COLLEGE YEAR.

### 1901.

- September 19-21. *Examination for Admission.*  
September 21, 23. *Registration of Students* having admission upon  
Diploma.  
September 24. FIRST SEMESTER BEGINS.  
November —. Thanksgiving recess of three days.  
December 20. (Evening.) Holiday Vacation begins.

### 1902.

- January 7. Exercises resumed.  
February 7. (Evening.) FIRST SEMESTER CLOSES.  
February 10. SECOND SEMESTER BEGINS.  
April 11. (Evening.) Recess begins, ending April 21.  
(Evening).  
June 19. COMMENCEMENT IN ALL THE DEPARTMENTS OF  
THE UNIVERSITY.

The school year extends from the Tuesday preceding the last Wednesday in September to the Thursday preceding the last Wednesday in June. Admission may be obtained at the beginning of the second semester, February 10, 1902.

### References.

- The Conditions of Admission, pages 22-24.  
The Fees and Expenses, page 24.  
The Order of Studies, page 10.  
The Lectures on Commercial Relations, page 17.  
The Laboratories, page 18.  
The Members of the Faculty, page 26.

*Address The School of Pharmacy, Ann Arbor, Mich.*

## AN EDUCATION FOR PHARMACY.

As a pursuit, pharmacy has three branches, namely: dispensing practice, the wholesale and foreign trade, and pharmaceutical manufacture. All these branches rest upon the modern sciences as well as upon commercial economics. In each branch there is a great deal of work that can only be done by persons of due scientific training. This training is obtained by laboratory work and lecture-room studies in chemistry, general, analytical, and organic, in pharmacognosy and cognate subjects, with the technics of pharmacy, all with adaptation to a distinct profession having its own experience and its own literature in all parts of the educated world. Besides this general groundwork of pharmacy at large, to provide for the larger demand, there is the necessity of training for specialists in this profession, to meet the call for experts, both in chemical and biological lines.

## THE UNIVERSITY AND THE STATE.

The University of Michigan is a part of the public educational system of the state. The governing body of the institution is a Board of Regents, elected by popular vote for terms of eight years, as provided in the Constitution of the state. In accordance with the law of the state, the University aims to complete and crown the work that is begun in the public schools, by furnishing ample facilities for liberal education in literature, science, and the arts, and for thorough professional study of engineering, medicine, pharmacy, law, and dentistry. Through the aid that has been received from the United States and from the state, it is enabled to offer its privileges with only moderate charges, to all persons who are qualified for admission.

## THE SCHOOL OF PHARMACY.

The School of Pharmacy of the University of Michigan reaches its thirty-fourth year in 1901-1902. It was organized

and has had its growth within the University. It was first and has been foremost of the university schools of pharmacy in the United States. Its scientific work is co-ordinated with that of the other university departments. Its students share the advantages, and take in the spirit of a great educational institution, one that is in touch with the work of the world as well as with its learning.

### THE GRADUATES OF THIS SCHOOL.

A directory of the graduates, numbering now 795, will be sent to any applicant. With the residence is given the pursuit and professional position of all of the alumni. It will be seen that those trained in this school are serving in responsible positions, including those of special skill, in all quarters of the United States, as chemists and pharmacologists, and as teachers in other colleges, while a greater number are prescriptionists and proprietors in pharmacy.

### THE CALL FOR GRADUATES.

The number of the graduates of this school who are wanted is every year many times greater than the number who are ready. It is especially difficult to supply the demand for persons qualified for the best positions. Not a few of the most inviting opportunities are lost every year because there is no one having the scientific training necessary to fill them.

### LABORATORY CULTURE.

The Register of the Alumni indicates the influence of laboratory method upon the character of the college student. The graduates, taken as a body, have been steadily at work since they left college, almost without interruption, except when prevented by sickness. As a rule they have continued in the calling they chose when they entered this university. In whatever business they have engaged, they have succeeded with remarkably few exceptions, and have sustained commercial credit. They have been known for honorable character.

They represent systematic industry. The influence of sustained scientific work, at once with the hand and with the mind, enforcing patience and truth, in the formative years, sets the pace for the pursuits of life. This claim for laboratory education can be made only for thorough graded courses of full time, and for those based upon substantial preparatory schooling.

### THE COURSE OF TWO COLLEGE YEARS.

*[The College Year is one of nine months. See p. 2.]*

*This college course comprises Four Semesters*, each of four and a half months. The time of each semester is filled with laboratory work and with lectures, according to *The Schedule of Hours on page 10*, and that of *Required Subjects on page 20*. At the close of each semester, the student takes examination for credit in each subject, so that the work of the four semesters is graded throughout.

The two years' course provides the foundation in pharmacognosy and pharmacy, and the groundwork in analytical chemistry as applied in the drug business and required for various manufacturing pursuits.

Toward the end that the Pharmacist shall be qualified to act as an Analyst for Physicians, a good beginning is made by graduates of the two years' course. With a mastery of method in chemical analysis, including that of organic compounds and the attainment of skill with the microscope, as gained in two years, the special processes of clinical analysis can soon be undertaken.

### THE COURSE OF THREE YEARS.

This is completed by the work of A THIRD YEAR FOLLOWING GRADUATION FROM THE TWO YEARS' COURSE.

For the third year a large number of subjects is open to the student, with full liberty of election. *See the list of Elective Subjects on page 12.*

*The third year is especially designed to enable the phar-*

*macist to strengthen his professional relations by the practice of analysis for physicians.*

The laboratory work and lectures in BACTERIOLOGY and in PHYSIOLOGICAL CHEMISTRY are conducted and given by members of the Faculty of Medicine and Surgery in this University, and present advantages which have been shared by but comparatively few of the physicians in general practice. The advance in these subjects has been very rapid, so that the body of the medical profession is destitute of the equipment of the present day. In taking up these subjects, the student of pharmacy who has completed the two years' course, from his greater specialization in chemical and microscopical laboratory work, is prepared for superior service.

*The third year provides training for either the biological laboratory or the analytical laboratory of manufacturing works.*

The laboratory of experimental pharmacology of the University is open throughout the college year, and third-year students who make due preparation may avail themselves of this opportunity for education in a specialty of great influence in the future of both medicine and pharmacy. Advanced pharmaceutical chemistry is conducted in laboratory work throughout the college year. Researches in phyto-chemistry, or the chemistry of plants studied in the order of botanical relations, are conducted by members of the faculty, with assistants and holders of fellowships, in such a way as to give training to third-year students who elect this work.

Synthetic work in organic chemistry is carried on throughout the year, also research in the same subject. Any preparation for the manufacture of the synthetic remedies would require one or two years in this special laboratory following the two years' course in pharmacy.

Organic analysis, and assay methods for alkaloids, foods, fats, and oils, etc., should be continued for one or two semesters beyond the work of the two years' course by those who are to make analysis a special pursuit.

Chemical technology, in lectures daily through both se-

mesters, is elective in the third year of this school. There is a distinct laboratory for this branch, dealing with the assay of ores, Portland cement, illuminating gas, etc. This must follow a semester in advanced quantitative analysis and take in all four college years. Another line of work fully provided for is the chemistry of beet-sugar manufacture.

The laboratory of physical chemistry, very well equipped, presents a considerable number of courses in the Department of General Chemistry, available to students who have requisite preparation.

### THE COURSE OF FOUR COLLEGE YEARS.

An academic and professional course, leading to a bachelor's degree, B.S.(Phar.), and thereafter, if desired, to college graduate work for the higher university degrees in this and other countries.

The course includes studies in mathematics, language, and science, as well as the entire pharmaceutical work of the two years' course. *See page 12.* All the special studies stated under the head of three years' course are elective in the course of four years, so far as the time of the latter permits.

A Course of Five College Years is established, with graduate work and research in the fifth year, upon successful completion of which the degree of Master of Science in pharmacy is conferred.

### THE SUMMER SCHOOL.

The University holds a summer session, of six weeks' duration, in which can be obtained a large number of the laboratory and lecture courses of the School of Pharmacy. *These courses are stated in Announcement of the Summer School.*

In chemistry, inorganic and organic, qualitative, quantitative, and pharmaceutical, nearly all the several branches can be obtained in summer terms.

Of the third-year work, both BACTERIOLOGY and PHYSIOLOGICAL CHEMISTRY are given in the summer session, with lectures as well as laboratory work. A very thorough course in urine analysis is included. The physiological chemistry

can be completed in the session of one summer, the bacteriology in that of another summer. With this opportunity Graduates of this School, and others, by midsummer work, can enable themselves to establish in the Pharmacy a laboratory of clinical analysis for physicians.

### STUDIES IN OTHER DEPARTMENTS.

A student of the School of Pharmacy can obtain permission of the Faculty to take one or more studies in another department of the University, when it is found to his advantage. No additional expense for instruction is incurred.

### SELECTED WORK IN CHEMISTRY AND PHARMACY.

Students may enter the School of Pharmacy, under the terms of admission stated on page 24, for such studies as they desire to elect, in view of their purpose in life. The election of studies is so far restricted and regulated as to avoid waste of time on the part of the student.

### RESEARCH.

The work of a student who undertakes research is in charge of one or more of the professors, under the provisions of the Faculty. With this direction any student suitably prepared by previous training, may enter upon an investigation. Researches are constantly in progress to be published by the Faculty for the enlargement of knowledge. Facilities of laboratory and library for a special research may be granted to any competent person, registering as a student, whether the results are to be published or not. Holders of a Fellowship devote their time to experimental research with publication of the results. The opportunity of undergraduates in the research laboratories is usually confined to the last year of the four-years' course, the last semester of the two-years' course, or to a graduate year. Research is entitled to credit toward a degree in proportion to its extent and value.



## FELLOWSHIPS AND GRANTS FOR RESEARCH.

THE STEARNS FELLOWSHIP OF RESEARCH, now in its sixth year, has been maintained by means of gifts made by Messrs. Frederick Stearns & Company, of Detroit.

The RESEARCH FELLOWSHIP OF PARKE, DAVIS & Co., of Detroit, now in its fifth year, has been sustained for pharmaceutical investigation in the Laboratory of General Chemistry.

The FELLOWSHIP OF NELSON, BAKER & Co., of Detroit, is devoted to research in pharmacology and related chemical questions.

Under the above named fellowships the subjects of the research are determined by the Faculty.

THE COMMITTEE OF REVISION OF THE PHARMACOPEIA OF THE UNITED STATES, 1890-1900, made several grants for the support of special investigations in the laboratories of this school.

Any one who is desirous of having a special investigation made upon a question of importance is invited to sustain a fellowship for this purpose.

## THE COMMERCIAL LECTURE COURSE.

This is a course of special lectures by business men of prominence in responsible positions in Michigan and other states. The mercantile relations of the various pursuits, those of the retail dealer, the manufacturer, the jobber, and the broker, are presented by men who speak from their own experience. Dealings with the banks, detail of avoidable losses, lessons of competition are set forth, as also the opportunities open to young men of scientific training. *This is a course required to be taken by all students of the School.* The schedule of hours of this course is seen on page 17.

## FACILITIES IN LARGE MANUFACTURING WORKS.

The students of this school have special advantages of acquaintance with pharmaceutical manufacture on the largest scale. The several works of the great productive industries

of Detroit, eminent over the world, are easily reached by electric car, and from time to time an entire day is devoted to a systematic study of the operations of manufacture by the students in a body. The manufacturing companies exercise great liberality in opening all their processes to these classes of students, giving them systematic explanation of the work going on.

## ORDER OF STUDIES.

### I. IN THE COURSE OF TWO YEARS.

#### FIRST YEAR : FIRST SEMESTER.

<i>Hour.</i>	<i>Day.</i>	<i>Room.</i>	<i>Subject.</i>	<i>Instructors.</i>
8	M, T, W, Th, F,	A.	Qual. Anal. Sec. I.	Prof. JOHNSON.
			Sec. II.	Dr. SULLIVAN.
9	M, T, W, Th, F,	Med. Bld.	Gen. Chem.	Prof. FREER.
1-5	M, T, W, Th, F,	Lab.	Qual. Anal.	Prof. JOHNSON and Dr. SULLIVAN.

#### SECOND YEAR : FIRST SEMESTER.

8	M, W,	Museum.	Mat. Med.	Dr. VAN NATEN.
8	T, Th,	Mus.	Pharmacognosy.	Prof. SCHLOTTERBECK.
9	M, W, F,	A.	Pharmacy.	Prof. STEVENS.
10	M, T, W, Th, F, A.		Organic Chem.	Prof. PRESCOTT.
(To be announced.)		Tappan H	Crystallography.	Prof. PETTEE.
1-5	M, T, W, Th, F,	Lab.	Pharmacy.	Prof. STEVENS and Mr. BLOME.

#### FIRST YEAR : SECOND SEMESTER.

8	M, T, W, Th, F,	B.	Pharmacy.	Prof. STEVENS.
9	T, Th,	B.	Quant. Anal.	Prof. CAMPBELL.
10-12	M, T, Th, F,	Bot. Lab.	Micro-Botany.	Prof. SCHLOTTERBECK.
10	W,	Mus.	" "	" "
11	W,	A.	Chosen Subjects.	Non-resident Lecturers.
1-5	M, T, W, Th, F,	Lab.	Quant. Anal.	Prof. CAMPBELL and Mr. Woods.

## SECOND YEAR : SECOND SEMESTER.

8	W, F,	Mus.	Mat. Med.	Dr. VAN NATEN.
8	M, T, Th,	Mus.	Pharmacognosy.	Prof. SCHLOTTERBECK
9	T, Th,	C.	Organ. Anal.	Mr. TROWBRIDGE.
10	W, Th, F,	B.	Pharmacy.	Prof. STEVENS.
11	W,	A.	Chosen Subjects.	Non-resident Lecturers.
1-5	M, T, W, Th, F, Lab.		Drug Assaying, Alkaloids, Fats, etc.	} Mr. TROWBRIDGE.
			Prescriptions.	
				Prof. STEVENS.

## II. IN THE COURSE OF THREE YEARS.

*The Third Year in Pharmacology.*

## IN FIRST SEMESTER.

## LABORATORY.

*Pharmacology.*—Professor CUSHNY and Dr. VAN NATEN.

*Bacteriology.*—Professor NOVY.

*Chemical Researches on the Vegetable Drugs.*—Prof. SCHLOTTERBECK.

Electives in advanced quantitative work, assaying of ores, and organic chemistry.

## LECTURES.

*Bacteriology.*—Professor NOVY — *four times a week.*

*Pharmacology.*—Professor CUSHNY — *five times a week.*

*Physiology.*—Professor LOMBARD — *four times a week.*

*Physiological Chemistry.*—Professor VAUGHAN, Professor NOVY.

Elective lectures: Chemical Technology (Mr. WHITE), Sugar Chemistry (Mr. TROWBRIDGE), Metallurgy (Professor CAMPBELL).

## IN SECOND SEMESTER.

## LABORATORY.

*Pharmacology.*—Professor CUSHNY and Dr. VAN NATEN.

*Physiological Chemistry.*—Professor NOVY and Mr. BLISS.

*Pharmacopaeial Methods.*—Professor STEVENS.

*Synthetic Organic Chemistry.*—Professor GOMBERG.

Elective work in Food Analysis (Mr. TROWBRIDGE), Toxicology (Professor PRESCOTT).

## LECTURES.

*Physiological Chemistry.*—Professor VAUGHAN — *three times a week.*

*Pharmacology.*—Professor CUSHNY—*five times a week.*

*Physiology.*—Professor LOMBARD—*four times a week.*

*Benzine Derivatives.*—Professor GOMBERG—*four times a week.*

Elective lectures: Organic Chemical Technology (Mr. WHITE),  
Sugar Chemistry (Mr. TROWBRIDGE).

### III. IN THE COURSE OF FOUR YEARS.

Students who enter the School prepared in Latin, in German, and in chemistry, as high school studies, are advised to arrange their work in accordance with the scheme printed below. Students who enter with French instead of German, or without chemistry, are advised to follow the same scheme in general, with such modifications as may be necessary.

*First Year, First Semester:*—Mathematics, *four* hours; German *four* hours; General Chemistry, *four* hours, and English, *three* hours, or French, *four* hours.

*First Year, Second Semester:*—Mathematics, *four* hours; Physics, *four* hours; Pharmacognosy, *five* hours; French, *four* hours.

*Second Year, First Semester:*—Analytical Chemistry, *ten* hours; Pharmacognosy C, *two* hours; Physics, *four* hours.

*Second Year, Second Semester:*—Analytical Chemistry 4, *seven* hours; Pharmacy A, *three* hours; Pharmacognosy E, *two* hours; Elementary Physical Chemistry, *three* hours; English, *three* hours; German Reading, *one* hour.

*Third Year, First Semester:*—Pharmacy B, *eight* hours; Organic Chemistry 10, *five* hours; Mineralogy, *two* hours.

*Third Year, Second Semester:*—Organic Analysis, *seven* hours; Pharmacy C, *four* hours; elective studies, *five* hours.

*Fourth Year, First Semester:*—Pharmacognosy D, *three* hours; Synthetic Organic Chemistry, *five* hours. Elective studies and studies in research, *eight* hours.

*Fourth Year, Second Semester:*—Pharmacognosy F, *two* hours; Electives and research, *fourteen* hours.

## COURSES OF INSTRUCTION.

### PHARMACY.

- A. Theory and Practice of Pharmacy. Lectures and recitations. *Five* hours. Second Semester. Professor STEVENS.
- B. Operative Pharmacy and Pharmaceutical Preparations. Laboratory work and recitations. *Eight* hours. First semester. Professor STEVENS.

Course B must be preceded by Course 1 in analytical chemistry.

- C. Pharmaceutical Technology and Prescription Practice. Lectures and work at the prescription stand. *Four hours.* Second Semester. Professor STEVENS.

### PHARMACOGNOSY.

MICRO-BOTANY, PHARMACOGNOSY, PHARMACOLOGY, THERAPEUTICS.

- A. Micro-botany. Lectures and laboratory work. *Five hours.* Second Semester. Professor SCHLOTTERBECK.
- C. Pharmacognosy. Lectures, recitations, and practical exercises. *Three hours.* First Semester. Professor SCHLOTTERBECK.
- D. Materia Medica. Recitations and lectures. *Two hours.* First Semester. Dr. VAN NATEN.  
Course D may accompany Course C.
- E. Pharmacognosy. Continuation of Course C. *Two hours.* Second Semester. Professor SCHLOTTERBECK.
- F. Materia Medica. Continuation of Course D. *Two hours.* Second Semester. Dr. VAN NATEN.  
Course F may accompany Course E.

### GENERAL CHEMISTRY.

1. (New number) Elementary Inorganic Chemistry. Experimental lectures, laboratory work and recitations. *Extending through both semesters. In all, eight hours.* Lectures twice a week. Laboratory work twice a week. Recitation once a week. Mr. HIGLEY, Mr. LICHTY, Dr. HULETT.
- A. Inorganic Chemistry, Descriptive and Experimental. Lectures and quizzes. *Five hours.* First Semester. Professor FREER.  
Course A is a course for beginners, extending no farther than Course 1.
5. Inorganic Chemistry, Descriptive and Experimental. Continuation of Course 1. Lectures and recitations. *Five hours.* Second Semester. Dr. HULETT.
- 4 and 4a. Elementary Physical Chemistry. Lectures, *three hours,* and laboratory, *three hours'* credit. Dr. BIGELOW.  
Must be preceded by Course 1 and Course 2 and preceded or accompanied by Course 3 or Course 5 in General Chemistry.
12. Physical Chemistry. Laboratory work ending in research. *Credit arranged with instructor.* Dr. BIGELOW.  
Course 12 is designed primarily for graduates, but is open, as an elective, to undergraduates who have sufficient preparation.

## ANALYTICAL CHEMISTRY.

## QUALITATIVE ANALYSIS, QUANTITATIVE ANALYSIS, TECHNICAL ANALYSIS.

1. Qualitative Analysis. Laboratory work and recitations. *Ten hours.* Either First or Second Semester. Also given [as Course 3] *five hours* in First Semester and [as Course 3a] *five hours* in Second Semester. Professor O. C. JOHNSON and DR. SULLIVAN.

Course 1 should be preceded by a course in general chemistry.

2. Advanced Qualitative Analysis. Laboratory work and recitations. Continuation of Course 1. *Five hours.* Second Semester. Prof. O. C. JOHNSON.

4. Quantitative Analysis. Laboratory work, lectures, recitations. *Seven hours.* Either First or Second Semester. Professor CAMPBELL.

Course 4 must be preceded by Course 1.

5. Advanced Quantitative Analysis. Laboratory work. *Five hours.* Either First or Second Semester. Professor CAMPBELL.

Course 5 must be preceded by Course 4. It is open only to those who receive special permission.

6. Iron and Steel Analysis. Laboratory work. *Five hours.* Either First or Second Semester. Professor CAMPBELL.

Course 6 is open to those who have completed Course 4 and have received special permission.

8. Analysis of Minerals. Laboratory work. *Five hours.* Either First or Second Semester. Professor CAMPBELL.

Course 8 must be preceded by Course 4. It is open only to those who receive special permission.

- G. Water Analysis. Laboratory work and reading. *Three hours.* Either First or Second Semester. Professor PRESCOTT and Mr. TROWBRIDGE.

Course G must be preceded by Course 4. It is open only to those who receive special permission.

SHORTER COURSES IN QUALITATIVE CHEMISTRY FOR STUDENTS NOT CANDIDATES FOR A DEGREE.

- H. Two Months' Course in Qualitative Chemistry. Laboratory work and recitations. Four classes are formed during the year.
3. First Steps in Qualitative Analysis. Laboratory work and recitations. Either First or Second Semester. Professor O. C. JOHNSON.

Course 3 constitutes about one-half of Course 1 in analytical chemistry. It gives more analytical work than Course H.

## ORGANIC CHEMISTRY.

INCLUDING ANALYTICAL AND APPLIED ORGANIC CHEMISTRY.

10. Carbon Compounds. Lectures. *Five hours*. First Semester. Professor PRESCOTT.  
Course 10 must be preceded by a course in general chemistry and a course in analytical chemistry.
12. Organic Preparations. Laboratory work in organic synthesis. *Three, four, or five hours*. Either First or Second Semester. Professor GOMBERG.  
Course 12 may accompany or follow Course 10.
14. Organic Analysis and Drug Assaying. Laboratory work and lectures. *Seven hours*. Second Semester. Mr. TROWBRIDGE.  
Course 14 must be preceded by Course 10 and by a course (4) in quantitative analysis.
- DD. Sanitary and Commercial Organic Analysis. Continuation of Course 14. Laboratory work and reading. *Five hours*. Either First or Second Semester. Professor PRESCOTT and Mr. TROWBRIDGE.
- E. Toxicology, Inorganic and Organic, Chemical and Microscopical. Laboratory work and reading. *Three hours*. Either First or Second Semester. Professor PRESCOTT and Mr. TROWBRIDGE.  
Course E must be preceded by Course 14.

## BEGINNING COURSES IN ORGANIC CHEMISTRY.

- F. Organic Chemistry. Lectures. *Two hours*. First Semester. Assistant Professor GOMBERG.
28. Organic Chemistry. Lectures. *Four hours*. Second Semester. Professor PRESCOTT.  
Courses F and 28 are intended primarily for classes in other departments of the University, and are open to students in the School of Pharmacy only by special permission.

## PHYSIOLOGICAL CHEMISTRY AND BACTERIOLOGY.

2. Bacteriology. Lectures. *Three hours*. First Semester. Professor NOVY.
3. Bacteriology. Laboratory work. *Three hours*. Professor NOVY.  
Course 3 is given four times a year, each class working for two months.
7. Physiological Analysis, including the Analysis of Urine. Laboratory work and lectures. *Four hours*. Professor NOVY.  
Course 7 is given four times a year, each class working for two

months. It must be preceded by a course in qualitative analysis and by Course 10 in organic chemistry.

8. Physiological Chemistry. Continuation of Course 7. Laboratory work and lectures. *Seven hours.* Either First or Second Semester. Professor NOVY.

Course 8 must be preceded by a course in quantitative analysis.

### PHARMACOLOGY.

- A. Pharmacology. Laboratory work and reading. *Three hours.* Either First or Second Semester. Professor CUSHNY.

Course A must be preceded by Course 10 in organic chemistry, and by previous work in physiology. It is open only to those who receive special permission.

- AA. Pharmacology. Lectures. *Five hours.* Either First or Second Semester. Professor CUSHNY.

- B. Physiology. Lectures and recitations. *Four hours.* Either First or Second Semester. Professor LOMBARD.

Course B must be preceded by a course in organic chemistry, and it is also desirable that the student have had studies in anatomy. It is open only to those who receive special permission.

### MINERALOGY.

- A. Crystallography. Twelve lectures supplemented by practical exercises. First Semester. Professor PETTEE.

1. Lectures and practice. *Two hours.* Either First or Second Semester. Professor PETTEE.

Course 1 should be preceded by a course in general chemistry. It includes Course A.

2. Lectures and practice. *Five hours.* Second Semester. Professor PETTEE.

Course 2 should be preceded by a course in general chemistry and a course in analytical chemistry. It includes Course 1.

### PHYSICS.

1. Mechanics, Sound, and Light. *Five hours.* Second Semester. Professor REED.

For Course 1 a knowledge of plane trigonometry is indispensable.

2. Heat, Electricity, and Magnetism. Lectures. *Five hours.* First Semester. Professor CARHART.

Course 2 must be preceded by Course 1 and by a course in general or in analytical chemistry.



## LECTURES ON COMMERCIAL RELATIONS.

In the second Semester of 1900-1901, this course was organized as follows:

- Avoidable Losses in the Drug Business*, Feb. 13.—JOHN D. MUIR, class of 1884, member of the State Board of Pharmacy, house of Muir & Co., Druggists, Grand Rapids, Mich.
- The National Association of Retail Druggists*, Feb. 20.—D. E. PRALL, of Executive Committee of N. A. R. D.—Wholesale and Retail House of D. E. Prall & Co., Saginaw, Mich.
- Channels of Pharmaceutical Commerce*, Feb. 27.—ARTHUR S. PARKER, class of 1879. Druggist, 747 Woodward Ave., Detroit, and representative of Parke, Davis & Co.
- Emergency Cases in the Drug Store and how to treat them*, March 6.—Dr. BERT K. VAN NATEN, Instructor in Pharmacology in the Departments of Medicine and of Pharmacy.
- The Banks and the Business Houses*, March 13.—Mr. DURAND W. SPRINGER, instructor in the commercial studies of the Ann Arbor High School.
- Emergency Cases*, continued, March 20.—BERT K. VAN NATEN, M.D.
- The Business Phase of the Druggist's Relation to the Medical Profession*, March 27.—JOSEPH HELFMAN, Editor of *The Bulletin of Pharmacy*, Detroit.
- Advertising Retail Business*, April 3.—JAMES W. T. KNOX, class of 1895, holder of the Stearns Fellowship in 1895-97, Editor of *The New Idea*, Detroit.
- Business Principles in Pharmacy*, April 10.—E. H. NELSON, of Nelson, Baker & Co., chemical and pharmaceutical manufacturers, Detroit.
- Some Practical Problems in the Drug Business*, April 24.—E. E. CALKINS, class of 1878, Druggist in Ann Arbor.
- The Cod Liver Oil Industry*, May 1.—Prof. C. C. SHERRARD, analytical chemist in the house of F. Stearns & Co., manufacturing pharmacists, Detroit.
- The Edible and Poisonous Mushrooms*, an illustrated lecture, May 8.—Prof. F. C. NEWCOMBE, of the University of Michigan.
- The Relation of the Pharmacist to the Law of the State*, May 15.—Prof. JAMES H. BEAL, Scio, Ohio.
- Selected Chapters in Pharmacognosy*, an illustrated lecture, May 22.—Dr. JULIUS O. SCHLOTTERBECK.
- National Associations in Pharmacy*, May 29.—Dr. A. B. PRESCOTT.

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THE LABORATORIES.

The Laboratories of chemistry comprise those for Qualitative, Quantitative, and Organic work. In pharmacy there is the work-room of the Preparations of Pharmacy and the Department of Prescriptions. The working quarters for Pharmacognosy are with the Museum. There are separate rooms for research workers and for instructors, with the students' laboratory for each branch, but not secluded from the students. All the above-named are in the Chemical Building of the University, and within the united organization of the chemical laboratories of all departments. Therewith are the laboratories of chemical technology.

The laboratory of general chemistry, in which is established physical chemistry, is in immediate relation. The work-rooms for Bacteriology and for Physiological Chemistry are in the Hygienic Laboratory of the University. The laboratory of Pharmacology is near at hand in the Medical Building. The Botanical laboratory is in the Biological Department of the University.

## LIBRARY, BOOKS OF REFERENCE, AND TEXT-BOOKS.

The library comprises the original repositories of the sciences of pharmacy, in complete sets of journals of all languages, as well as the latest works and the current periodicals. It is therefore not only a library for the student's reference, but for original investigation, resorted to by those engaged upon cases of importance. As a whole, the library is indexed and shelved in the Building of the General Library of the University, the next to the School of Pharmacy. The reading-room of the Laboratory contains duplicates of the main sets of reference books, for immediate use during working hours.

The class text-books of the School, those which the student should obtain for himself, can be obtained in the book-stores in this University town at lower rates than those customary in the general trade of the larger cities. These text-

books include the following: In General Chemistry, Freer. In Qualitative Analysis, Prescott and Johnson. In Quantitative, Clowes and Colman's Select Methods. In Pharmacy the U. S. Pharmacopœia. In Botany, Bastin. In Pharmacognosy, Flückiger, Maisch. In Organic Chemistry, Bernthsen, Richter. In Organic Analysis, Prescott, Allen, Lyons.

### **THE MUSEUM.**

This comprises collections in Pharmacognosy and the chemical industries. It occupies a floor space of 2,500 square feet in the chemistry building, and is provided with permanent cases. The chemical industries are represented by collections of the materials and the successive products of manufacture, and the resources and methods of industrial art.

IN PHARMACOGNOSY, the collection of medicinal plants is extensive and well chosen for instruction both in botany and in commercial history. It is represented by the series of working supplies in daily use in the classes. The crude drugs are displayed in comparison with their active constituents, each in its proportional quantity. Pharmacy is exemplified in the preparations of the pharmacopœia and the national formulary and apparatus for their production.

### **BOTANICAL GARDENS.**

The botanical gardens adjoin the building of the School of Pharmacy. The principal orders of flowering plants are here cultivated. They include the most important of the medicinal species, as well as experimental plantations, among which are grown drugs for chemical and pharmacological investigation. The gardens are used by the classes in pharmacognosy, pharmacy, and materia medica.

### **EXAMINATIONS.**

The examination upon each Course of instruction is held at the time the work of that Course is completed. The examinations, therefore, are held at the end of each semester, in February and in June.

The result of an examination is reported by the Professor in charge, for each student enrolled, to the Faculty, in terms as follows:

*Passed.*—Entitling the student to full credit for the course.

*Conditioned.*—Imposing some specified condition, usually to take another examination, the condition to be fulfilled before credit can be given.

*Provisionally Passed.*—Withholding the credit for the course until the student shall have done better work in *other* studies, in the judgment of the Faculty as a whole, who can change the record of Provisionally Passed to a record of Passed, or Conditioned, or Not Passed, whenever such change shall be justified by the scholarship of the student in his several studies.

*Not Passed.*—Requiring the student to go over the regular exercises of the study again before he receives another examination.

*Absent.*—With statement of the cause of absence; if the student has left the class, stating at what time; or stating if absent without excuse or explanation.

### REQUIREMENTS FOR GRADUATION.

Experience in the business of pharmacy is not made a requirement for a degree.

#### 1. *With the Degree of Pharmaceutical Chemist.*

[For requirements of college entrance, see page 22.]

##### FIRST YEAR, FIRST SEMESTER.

	Hours of Credit.*	Hours in Lect. & Rec.	Hours in Laboratory.
General Chemistry, Course A, . . .	5	90	
Analytical Chem., Course 1, <i>Qual.</i> , . . .	10	90	360
Total for First Semester, . . .	15	180	360

##### FIRST YEAR, SECOND SEMESTER.

Pharmacy, Course A, . . . . .	5	90	
Pharmacognosy, Course A, <i>Micro-</i> <i>Botany</i> , . . . . .	5	18	144
Analytical Chem., Course 4, <i>Quan-</i> <i>titative</i> , . . . . .	7	36	360
Total for second semester, . . .	17	144	504

##### SECOND YEAR, FIRST SEMESTER.

Pharmacy, Course B, <i>Preparations</i> , . . .	8	72	360
Organic Chemistry, Course 10, . . .	5	90	
Pharmacognosy, Course C, . . .	2	36	
Pharmacognosy, Course D, <i>Materia</i> <i>Medica</i> , . . . . .	2	36	
Mineralogy, Course A, <i>Crystallog-</i> <i>raphy</i> , . . . . .	1	6	12
Total for First Semester, . . .	18	240	372

\*"Hours of Credit" are the number of exercises *per week* for one semester

## SECOND YEAR, SECOND SEMESTER.

Pharmacog., Course F, <i>Materia Medica</i> , . . . . .	2	36	
Organic Chem., Course 14, <i>Analysis</i> , . . . . .	7	36	360
Pharmacognosy, Course E, . . . . .	2	36	
Pharmacy, Course C, <i>with Prescrip. Practice</i> , . . . . .	4	72	36
Lectures on chosen subjects, . . . . .	1	18	
	<hr/>	<hr/>	<hr/>
Total for Second Semester, . . . . .	16	198	396
Totals of required work, . . . . .	66	762	1632
		<hr/>	<hr/>
Hours in laboratories and lectures, . . . . .		2394	

2. *With the Degree of Bachelor of Science in Pharmacy.*

[For requirements of college entrance, see page 23]  
 [For the advisory sequence of studies, see page 12]

In English: Courses 1, 1a.

In German: (a) for those who entered *without* German, Courses 1, 2; (b) for those who entered *with* German, four hours.

In French: (a) for those who entered *without* French, Course 1 and 2 or an equivalent; or (b) for those who entered *with* French; four hours.

In Mathematics: Courses 1a, 2a.

In Physics: Course 1.

In General Chemistry: (a) for those who entered *without* Chemistry, Courses 1, 5; or (b) for those who entered *with* Chemistry, Course 5.

In Analytical Chemistry: Courses 1, 4.

In Organic Chemistry: Courses 1, 14.

In Mineralogy: Course 1.

In Pharmacognosy: Courses A, C, D, E, F.

In Pharmacy: Courses A, B, C.

From the other courses offered in the School, or in other departments of the University, the student must choose with the approval of the Faculty and complete enough including those above prescribed to make in all *one hundred and twenty* hours of credit,

### 3. *With the Degree of Master of Science.*

Graduates with the degree of Bachelor of Science, accepted as candidates for a higher degree, after at least a year of graduate study in three subjects, a major subject and two minors, may receive examinations for the degree of Master of Science, which is conferred in the School of Pharmacy.

## REQUIREMENTS FOR ADMISSION.

### **To study for the Degree of Pharmaceutical Chemist.**

Applicants for admission to the two-year course, leading to the degree of Pharmaceutical Chemist, must be at least eighteen years of age.

It will be of advantage to the applicant to obtain at least a year of practical training in a drug store before entering the School. The required work leaves the student no time for an engagement in a drug store during the school year.

#### ADMISSION WITHOUT EXAMINATION.

**From High Schools.**— Applicants holding diplomas of graduation from any of the full courses of the schools approved by the Faculty of the Department of Literature, Science, and the Arts, are admitted without examination, as are, also, graduates of four-year courses of other high schools of good standing. *The applicant may present his credentials upon the accompanying blank, certified to as stated, therewith, and send it at any time of the year, when he will be informed of the result of his application.*

**From Colleges.**— Students who have completed at least one year's work in an approved college of literature and science, and who bring explicit and official certificates describing their course of study and scholarship and testifying to their good character, are admitted without examination. Graduates of creditable colleges of medicine or of pharmacy are also admitted without examination.

#### ADMISSION ON EXAMINATION.

Applicants who bring evidence of HAVING BEEN ENGAGED IN THE PRACTICE OF PHARMACY for at least two years are admitted on examination in the following branches:

**English.** — Exercises in the writing of English with correctness. Especial regard is paid to orthography, punctuation, the use of capitals, grammatical construction, and rhetorical fitness.

**Mathematics.** — *Arithmetic.*— Including Proportion, Involution and Evolution, and the Metric System. *Algebra.*— To include Equations of the First Degree containing two or more unknown quantities.

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**Physics.**—Carhart and Chute's Physics or an equivalent.

**Chemistry.**—The high school preparation should include a year in chemistry, in which laboratory work is advised.

**Latin or German.**—To the extent of one year's study in an approved high school.

OTHER APPLICANTS ARE EXAMINED IN THE FOLLOWING BRANCHES:

**English.**—The same as given above.

**Mathematics.**—*Arithmetic and Algebra.*—The same as given above. *Geometry.*—The Elements of Plane Geometry.

**Latin or German.**—The applicant may offer (1) three years of preparation in Latin; or (2) two years in Latin and one year in German; or (3) one year in Latin and two years in German.

**Physics.**—Carhart and Chute's Elements of Physics or an equivalent.

**Chemistry.**—The same as given above.

**Botany.**—Laboratory work for half a year with occasional recitations and review exercises.

### **To Study for the Degree of Bachelor of Science in Pharmacy.**

The entrance requirements for B.S. (Phar.) are the same as those for the bachelor's degree in the Department of Literature, Science and the Arts in this University.

### **Admission to Advanced Standing.**

Students who have gained admission to the School may apply for credit in any of the college studies which they have pursued in another college or in a high school whose graduates are admitted. Such application should be made to the Dean at the time of entering the School, and may be referred to the professor in charge of the studies in which credit is asked. He may appoint a time for examination of the applicant upon the study. Applicants are desired to bring explicit credentials as to the work done. *Credits from other Schools of Pharmacy are adjusted separately for each study, as stated above. Owing to differences in the order and extent of the studies, credits can not be counted in years of pharmaceutical college study.* Applicants by correspondence, before the opening of college, may have their credentials acted upon for advanced standing.

Credits are received from the other departments, and from the Summer Session, of this University.

examination being required as to the correctness of English writing.

Students admitted under the above provisions are not regarded as candidates for any degree, and they do not become eligible for graduation until they have passed all the examinations for admission to the course leading to the degree which they seek to obtain. To become eligible for graduation with the degree of Pharmaceutical Chemist, the student must at least pass the examination for admission required of those who have been engaged in the practice of pharmacy. To become eligible for graduation with the degree of Bachelor of Science, the student must meet the full entrance requirements of the course leading to that degree.

Students not candidates for a degree may select such studies as they are found prepared to pursue, under the regulations of the Faculty. Courses of selected studies are arranged for students, to suit their purposes and qualifications (see page 13). Selected studies may be continued so long as, in the judgment of the Faculty, they are carried with success and profit.

### **Applicants for Admission**

Applicants arriving in Ann Arbor will call first at the office of the Dean or at the office of the Secretary in the Pharmacy Building of the University.

APPLICANTS BY LETTER will please address THE SCHOOL OF PHARMACY, ANN ARBOR, MICH.

### **FEES AND EXPENSES**

THE MATRICULATION FEE is \$10 for residents of Michigan, and \$25 for others. It is paid but once, and gives privileges of permanent membership in any department of the University.

THE ANNUAL FEE is \$35 for residents of Michigan, and \$45 for others. It is paid the first year, and each year thereafter.

In the Chemical Laboratory the student pays by account for the chemicals and apparatus which he uses. The expense varies with prudence and economy, the average amount being about one dollar and twenty cents per week. Advanced payment is required from time to time; the first deposit being twenty dollars.

At graduation there is a diploma fee of \$10.

Students obtain board and lodging in private families for

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from three to five dollars a week. Room rent varies from seventy-five cents to two dollars a week for each student. Students arriving in Ann Arbor can obtain information in regard to rooms and board by calling at the Steward's office. A register of rooms is also kept at Newberry Hall, under the care of the Students' Christian Association.

## THE FACULTY

JAMES B. ANGELL, LL.D., PRESIDENT.

ALBERT B. PRESCOTT, M.D., LL.D., DEAN.

ALVISO B. STEVENS, PH.C., SECRETARY.

### General Chemistry:

\*PAUL C. FREER, PH.D., M.D.

S. LAWRENCE BIGELOW, PH.D.

DAVID M. LICHTY, M.S.

### Analytical Chemistry:

OTIS C. JOHNSON, A.M., PH.C.

EDWARD D. CAMPBELL, B.S.

EUGENE C. SULLIVAN, PH.D.

### Mineralogy:

WILLIAM H. PETTEE, A.M.

### Organic Chemistry:

ALBERT B. PRESCOTT, M.D., LL.D.

MOSES GOMBERG, Sc.D.

### Botany, Pharmacognosy, Materia Medica:

JULIUS O. SCHLOTTERBECK, PH.C., B.S., PH.D.

CLARENCE A. GOOD, M.D.

### Pharmacy, Prescriptions and Drug Assaying:

ALVISO B. STEVENS, PH.C.

### Accounts :

DURAND WILLIAM SPRINGER, B.S.

### Pharmacology:

ARTHUR R. CUSHNY, A.M., M.D.

### Physiology:

WARREN P. LOMBARD, A.B., M.D.

### Bacteriology and Physiological Chemistry:

FREDERICK G. NOVY, Sc.D., M.D.

CHARLES L. BLISS, B.S.

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\* Absent on leave in 1901-1902.

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**Mathematics, Physics, Languages:**

THE FACULTY OF LITERATURE AND SCIENCES.

ASSISTANTS TO THE FACULTY 1901-1902

**Pharmacy and Drug Assaying:**

WALTER H. BLOME, PH.C.

**Qualitative Analysis:**

JOHN B. REED.

**Quantitative Analysis:**

MORTIMER B. KENNEDY.

**Research:**

LEMUEL W. FAMULENER, PH.C.

CHARLES R. ECKLER.

HAROLD C. WATKINS.

## GRADUATES OF 1901

## WITH DEGREE OF PHARMACEUTICAL CHEMIST

Bessie Beatrice Blackburn,	Edgar Steiner Hauenstein,
Walter John Braidwood,	George F. Hebert,
Mary Liston Brown,	Fred Hudiburg,
Frank Deatrich Cocklin,	Frank Morton Leslie,
Charles Henry Dawson,	Oscar Irving Matthaei,
Edgar D. DeLaMater,	Albert Theodore Pohlmann,
Rafael del Valle,	Nancy Ruth Reddick,
Thurston Nathaniel Dissosway,	Emmet Rowe,
Cecil Veva Dunbar,	Earl Alfred Ryan,
Harold Haggard Eatough,	Marie Helen von Borries,
Ben Putnam Edmonds,	Sigrid von Zellen,
Herbert William Emerson,	Alfred George Walker,
Charles Nicholas Greusel,	Frank Allen Williams.

## BACHELOR OF SCIENCE (IN PHARMACY).

Harry Edwin Douglas, Ph.C.

## STUDENTS IN 1901-1902

## RESIDENT GRADUATES

NAME	DEGREE *	CREDIT	RESIDENCE
Frederick James Austin, Ph.C.,		65	<i>Detroit.</i>
Walter Henry Blome, Ph.C.,	B.S.	129	<i>Ann Arbor.</i>
Robert Joseph Colgrove, Ph.G.,			
<i>Detroit College of Med-</i>			
<i>icine,</i>	B.S.	77	<i>Detroit.</i>
Thurston Nathaniel Dissosway, Ph.C.,		70	<i>Plattsburgh, N. Y.</i>
Herbert William Emerson,			
Ph.C.,	B.S.	98	<i>Nelson, Ont.</i>
Louis Theodor Wilhelm Ho-			
greffe, Ph.C.,	B.S.	109	<i>Saint Louis, Mo.</i>

\* The abbreviations in the column headed DEGREE indicate the degree for which the student is studying. Where no abbreviation is given, the student is pursuing miscellaneous studies without being registered as a candidate for a degree. The figures in the column headed CREDIT indicate the number of hours of work taken prior to the beginning of the current academic year, 1901-1902, and completed without conditions, or credited on advanced standing. By an hour of work is meant the equivalent of one exercise a week for one semester.

William Alexander Pearson, Ph.C.,	65	<i>Detroit.</i>
Emmet Rowe, Ph.C.,	65	<i>Redlands, Cal.</i>
Helmer William Smidt, Ph.G., <i>Purdue University, Ph.C.,</i>	22	<i>Chicago, Ill.</i>

## UNDERGRADUATES

NAME	DEGREE	CREDIT	RESIDENCE
Frederick Beekel,	B.S.	33	<i>Elyria, O.</i>
Mabel Lucile Berger,	Ph.C.		<i>Grass Lake.</i>
Anthony Edgar Block,	Ph.C.		<i>Michigamme.</i>
Marie Louise Boynton,	Ph.C.		<i>Port Huron.</i>
Theodore Jefferson Brewster,	Ph.C.		<i>Detroit.</i>
Christian Adam Burck,		55	<i>Monroe.</i>
Alfred Napoleon Carpenter,	Ph.C.		<i>Plattsburgh, N. Y.</i>
Lester Hyatt Carragan,	Ph.C.	15	<i>Detroit.</i>
Alfred Edward Chadwick,	Ph.C.		<i>Chicago, Ill.</i>
Rollin Harvey Cogswell,	Ph.C.		<i>Jackson.</i>
Hugh Alexander Clotworthy,	Ph.C.	32	<i>Aiken, S. C.</i>
William L. Dawson,	Ph.C.	25	<i>Hastings.</i>
Thomas Harold Dexter,	B.S.		<i>Oberlin, O.</i>
William Edmund Dillon,	Ph.C.	15	<i>East Tawas.</i>
Myron George Doll,		32	<i>North East, Pa.</i>
George Henry Dupont,	Ph.C.	10	<i>Plattsburgh, N. Y.</i>
Edgar Otis Eaton,	Ph.C.		<i>Bluffton, O.</i>
Gordon William Eatough,	Ph.C.		<i>Gladstone.</i>
Charles Ralph Eckler,	Ph.C.	46	<i>Elyria, O.</i>
Fred John Frueh,	Ph.C.		<i>Grand Rapids.</i>
Casriel Fishman,	Ph.C.	34	<i>Grand Rapids.</i>
James Howard Flagg,	Ph.C.	32	<i>Kalkaska.</i>
James Harvey Forrest,	Ph.C.	5	<i>Au Sable.</i>
Kent Kane Gimmy,	Ph.C.		<i>Carrollton, Ill.</i>
Rudolph Oscar Glatzel,	Ph.C.		<i>Ann Arbor.</i>
Harry Russell Hallett,			<i>Northampton, Mass.</i>
Charles Frederick William Hansen,	Ph.C.	5	<i>Ludington.</i>
Frank Ice Hard,	Ph.C.	20	<i>Clinton.</i>
Sidney Hauenstein,	Ph.C.		<i>Bluffton, O.</i>
Benjamin Haug,	Ph.C.		<i>Indianapolis, Ind.</i>
Fred Albert Hauser,	Special.		<i>Kelley's Island, O.</i>
Roy Green Hoyt,	Ph.C.		<i>Ypsilanti.</i>
James Richard Huber,	Ph.C.		<i>Ann Arbor.</i>

Frederick Jacob Carl Klocke,	Ph.C.	15	<i>Three Rivers.</i>
Burton Samuel Knapp,	B.S.	31	<i>Monroe.</i>
Claude Wilbur Lewis,	Ph.C.		<i>Armada.</i>
William Brown Logan,	Ph.C.		<i>Dallas, Tex.</i>
Martin Edgar Luther,	Ph.C.	32	<i>Hart.</i>
Arthur George Lyon,	Ph.C.	32	<i>Coldwater.</i>
Arthur T. McBride,	Ph.C.		<i>Joliet, Ill.</i>
Robert K. McClellan,	Ph.C.		<i>Birmingham.</i>
Frank Keehn Ovitz,			<i>Mineral Point, Wis.</i>
Percy Seaman Peck, LL.B.,	Ph.C.	20	<i>Grand Rapids.</i>
Arthur Leo Randall,	Ph.C.	15	<i>Ann Arbor.</i>
Walter Christian Reibling,	Ph.C.		<i>Detroit.</i>
Charles Webb Sadler,			<i>Sandusky, O.</i>
Earl Williams Salsbury,			<i>Reading.</i>
Charles A. Schurrer,	Ph.C.		<i>Lakeport.</i>
Silas Franklin Scott, B.S.,			
<i>Michigan Agricultural Col-</i>			
<i>lege,</i>	Ph.C.	32	<i>Romeo.</i>
Arthur Garfield Smith,	Ph.C.	49	<i>Winchester, Ill.</i>
William D. Stanger,	Ph.C.		<i>Dundee.</i>
Harry M. Vandeburg,	Ph.C.	15	<i>Homer.</i>
Raymond Jacob VanDorn,	B.S.		<i>Ann Arbor.</i>
Olga Olive von Zellen,	B.S.		<i>Skaneec.</i>
Lewis Eugene Warren,	Ph.C.		<i>Hillsdale.</i>
Homer Charles Washburn,	Ph.C.	58	<i>Hastings.</i>
Harold Cole Watkins,	Ph.C.	65	<i>Waterville, Me.</i>
John Schnell Wehrle,	Ph.C.		<i>Altoona, Pa.</i>
Harry Howard Willcox,	Ph.C.		<i>Dundee.</i>

The following students, registered in the Department of Medicine and Surgery, are pursuing undergraduate studies in the School of Pharmacy:

Norman Percy McGay,	<i>Oak Park, Ill.</i>
William John Zalesky,	<i>Cedar Rapids, Ia.</i>



## CONTENTS.

	PAGE
Calendar of the College Year.....	2
References .....	2
Training in Pharmacy.....	3
The University and the State.....	3
The School of Pharmacy.....	3
The Graduates of This School.....	4
The Demand for Graduates.....	4
A Finishing School.....	4
Laboratory Culture .....	5
The Course of Two College Years.....	5
The Course of Three Years.....	6
The Course of Four Years.....	7
The Summer School.....	8
Studies in Other Departments.....	8
Selected Work in Chemistry and Pharmacy.....	8
Research .....	8
Fellowships and Grants for Research.....	9
Commercial Training.....	9
Special Lecture Course.....	10
Facilities in Manufacturing Works.....	11
Order of Studies:—	
In the Course of Two Years.....	11
In the Course of Three Years.....	12
In the Course of Four Years.....	13
Courses of Instruction:—	
Pharmacy .....	13
Pharmacognosy .....	14
General Chemistry, Analytical Chemistry.....	14
Organic Chemistry.....	15, 16
Physiological Chemistry and Bacteriology.....	16
Pharmacology, Mineralogy.....	16, 17
Physics .....	17
The Laboratories.....	17
Library, Books of Reference, Text-books.....	17
The Museum.....	18
The Botanical Gardens.....	19
Examinations .....	19
Requirements for Graduation:—	
With the degree of Ph.C.....	19
With the degree of B.S. (Phar.).....	20
With the degree of M.S.....	21
Requirements for Admission.....	21
Fees and Expenses.....	24
The Faculty.....	26
Graduates in 1901.....	28
Students in 1901-1902.....	28











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